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INTERPRETATION OF LATERAL RADIOGRAPHS OF THE CHEST
WITH SPECIAL REFERENCE TO TUBERCULOSIS IN CHILDHOOD

BY

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AND

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Radiography is essential in the diagnosis of pulmonary tuberculosis in children, in whom the common lesions are those of the primary infection with predominant involvement of the bronchial glands. The object of this paper is to inquire into the anatomical basis of such radiological examinations, with special reference to lateral radiographs, an aspect of the subject which in our opinion has hitherto been neglected.

Primary tuberculous infection of the lungs is manifested by a primary focus in the lung soon followed by caseation of the bronchial glands. The lung focus remains small as a rule, and is not obvious clinically unless it is surrounded by much perifocal inflammation. On the other hand, the changes in the bronchial glands are conspicuous. At first only those glands are involved which drain the site of the lung focus, but in most children other groups of glands of the same or the opposite side are soon affected. The extent of this tuberculous spread depends chiefly on the age of the child: the younger the child the greater the extent of the involvement (Engel, 1930). This applies to the number as well as to the size of individual glands. Thus in primary tuberculosis the bronchial glands appear to be clinically of greater importance than the pulmonary focus which initiated their diseased condition, and it is therefore the glands which are the main object of investigation when a child is suspected to be suffering from pulmonary tuberculosis.

Radiological examination is an essential step in arriving at such a diagnosis; for the clinical picture is so vague that an accurate diagnosis is almost impossible unless the enlargement of the glands is so enormous that symptoms of mediastinal tumour are present—a rare occurrence; and the tuberculin test, though indispensable, indicates merely a tuberculous focus somewhere in the body. The focus might be recent or obsolete, small or large, in the chest or in the abdomen. But there are obvious difficulties associated with radiological examination of the bronchial glands, due to the deep situation of the glands and their relation to other structures in the chest.

Anatomical Basis of Antero-posterior Radiographs

Studies on the anatomical basis for the radiological diagnosis of diseased bronchial glands have been concerned, on the one hand, with the visibility of normal, enlarged, and caseous glands, and on the other with their topography in the radiograph. It has been shown that normal glands are invisible on a radiograph, that greatly enlarged glands (due to inflammation or engorgement) may appear as opacities, and that opacities are fairly conspicuous when the glands are caseous. This having been

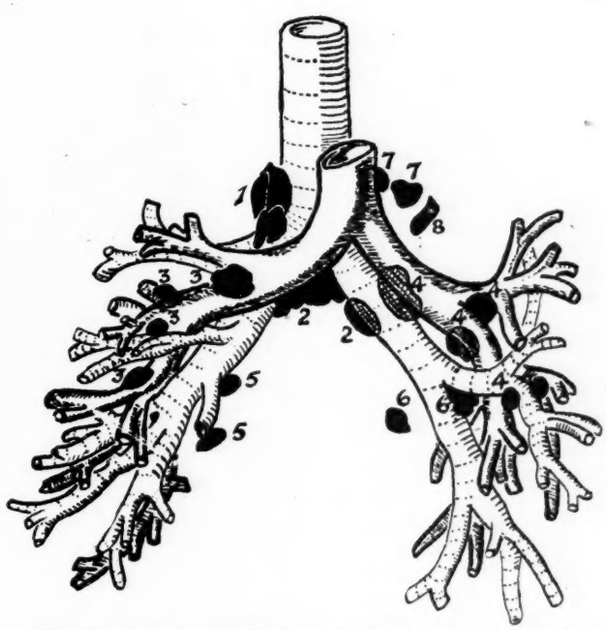

FIG. 1.—Showing distribution of bronchial glands in relation to the trachea and bronchi (striped) and to the pulmonary artery and its branches (drawn after a cast). 1, right tracheobronchial group of glands; 2, right and left bifurcation glands; 3, right lateral hilar glands; 4, left lateral hilar glands; 5, right medial hilar glands; 6, left medial hilar glands; 7, aortic group of glands; 8, ductus arteriosus gland. (In all subsequent figures the above numbering of glands will be used.)

established, the topography of the glands became clearly of moment, and it was studied and reported in detail by one of us elsewhere (Engel, 1926, 1933). The situation of the glands is indicated in the self-explanatory Figs. 1, 2a, 2b, 3a, and 3b. The glands are closely attached

to the bronchial tree, and therefore the situation of the latter in the radiograph is of decisive importance. Unfortunately, in the routine antero-posterior radiograph the main bronchi are invisible owing to their inclusion in the shadow of the heart and vertebra. This applies particularly to children under 4 years of age, in whom the size of the heart relatively to the chest is greater than in older children (compare Figs. 2a and 3a, and 2b and 3b)—a fact all the more unfortunate as enlarged bronchial glands are much commoner in young children. One group of glands are, however, favoured in regard to radiological exploration. The right tracheo-bronchial group of glands, which tend to enlarge more often than other groups even when they do not directly drain the pulmonary focus, protrude towards the lung field just above the hilar shadow (see Figs. 2b and 3b). Hence in the radiograph this group of glands retain their curved outline, which is not interfered with by the structures forming the hilar shadow proper and is rendered the more

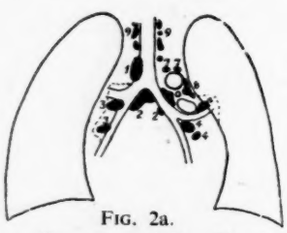

FIG. 2a.

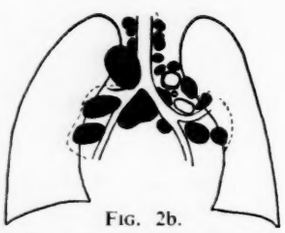

FIG. 2b.

FIGS. 2a and 2b.—Showing situation of normal and enlarged glands in relation to trachea and bronchi and the radiological hila (broken line) in a child about 1 year old. (9, right and left paratracheal groups of glands. Numbering of other glands as in Fig. 1.)

FIG. 3a.

FIG. 3b.

FIGS. 3a and 3b.—Showing situation of normal and enlarged glands in relation to trachea and bronchi and the radiological hila (broken line) in a child about 6 years old. (Compare with Figs. 2a and 2b. To identify glands, see caption under Fig. 2a.)

obvious by contrast of the glandular opacity with the surrounding aerated lung tissue. This does not hold good with strictly hilar glands, as these are intimately mixed with the other constituents of the hilum. Hence definitely *discernible* glandular shadows are rarely seen in the hilar regions, and carefully controlled post-mortem examinations have shown that this may even be the case when there is marked enlargement and caseation of glands. These remarks apply with particular force to the bifurcation gland. This gland is caseous more often and to a greater extent than even the right tracheo-bronchial group of glands, yet owing to its position within the shadow of the heart and vertebra it is not seen in the radiograph, however large and caseated it may be, unless it is massively calcified, when the condition is of little clinical interest.

The obvious limitations of the antero-posterior radiograph in the diagnosis of diseased bronchial glands therefore appear to call for any help that might be obtained from lateral radiographs.

Anatomical Basis of Lateral Radiographs

We have therefore attempted in Figs. 4a, 4b, 5a, and 5b, based on topographical studies of the chest in the literature and on post-mortem investigations (including the construction of many bronchial casts) of one of us (Engel, 1933), to present diagrammatically the situation of the bronchial glands in relation to neighbouring structures, from both the right and the left side. The bronchial tree and the pulmonary artery with its branches are seen much less clearly in the lateral than in the antero-posterior view; for in the lateral view the depth of structures traversed by the rays is relatively much greater than in the antero-

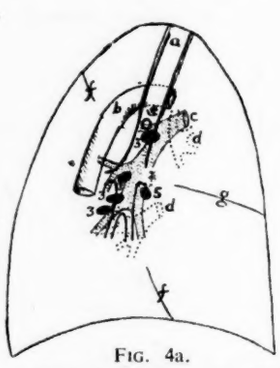

FIG. 4a.

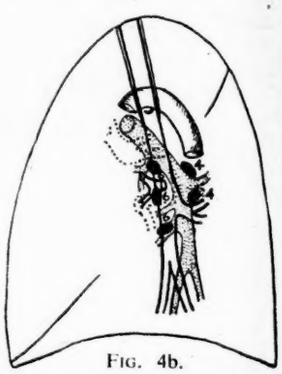

FIG. 4b.

FIGS. 4a and 4b.—Showing situation of glands (numbering as in Fig. 1) in relation to trachea and bronchi, pulmonary artery, and pulmonary veins, as seen laterally, from the right (Fig. 4a) and the left side (Fig. 4b). (a, trachea; b, aorta; c, pulmonary artery; d, pulmonary veins; e, carina; f and g, interlobar septa.)

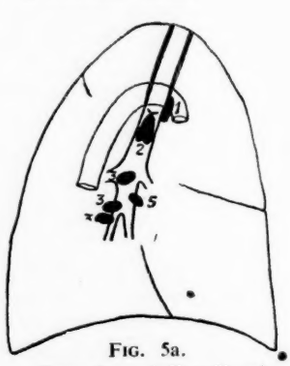

FIG. 5a.

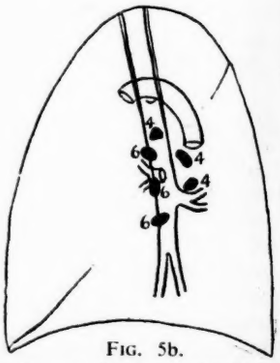

FIG. 5b.

FIGS. 5a and 5b.—Showing situation of glands (numbering as in Fig. 1) in relation to the trachea and bronchi alone, as seen laterally from the right (Fig. 5a) and the left side (Fig. 5b).

posterior view, the structures are crowded together in a smaller space, and there is much overlapping. The glands are anatomically connected with the pulmonary artery (see Figs. 4a and 4b), and they appear as anterior and posterior groups. This fact is of little importance in connexion with antero-posterior radiographs, in which the two groups cannot be singled out, but it might be useful in identifying individual opacities in lateral ones. Unfortunately the whole length of the pulmonary artery is not visible in lateral radiographs, so that in practice it is of little use for orientation. The trachea, on the other hand, can be made out distinctly in lateral radiographs. Figs. 5a and 5b have therefore been drawn to show the glands in relation to the bronchial tree alone. The bifurcation gland, which could not be shown in Figs. 4a and 4b, now comes into view. It will be recalled that it can in no circumstances (except when massively calcified) be seen in the antero-posterior radiograph. The aorta and pulmonary arteries may produce opacities which can cause confusion in the interpretation of lateral radiographs (see below).

Discussion

The above anatomical data will be found useful in interpreting lateral radiographs because they indicate exactly where to look for opacities, and render possible more accurate interpretation of shadows in situations that do not accord with these data. Lack of this knowledge is apt to cause bewilderment in interpreting lateral radiographs, particularly as both sides of the chest are projected on to the same plane (the side nearest to the film plays, however, a predominant part in the formation of the resultant picture).

The topographical orientation depends on the visibility of the trachea. (See Figs. 6a and 6b. These are contact diagrams, reduced for reproduction, of a right and a left lateral radiograph respectively. Normal-sized glands have been drawn in the situations determined by the anatomically constructed figures 4a, 4b, 5a, and 5b.) The trachea is clearly recognizable in most films. The end of the bright stripe which it produces corresponds to the carina; the narrower continuation of it, corresponding to the main bronchus, is often also seen. The shadows thrown by the edge of each scapula must be recognized and differentiated from the shadows caused by the walls of the trachea. The situation of the different glands can now be determined (see Figs. 6a and 6b). Additional help may be provided by a shadow commonly produced by the arch of the aorta, and by one occasionally formed by the main branches of the pulmonary artery. That due to the pulmonary artery (Fig. 6a, P) is situated in front of the bifurcation of the trachea. That due to the aorta tends to be triangular in shape with its base on the posterior wall of the trachea; it is as a rule better seen in right than in left lateral films (A in Figs. 6a and 6b; see also Figs. 8b, 9b, 10b, and 11b). Both opacities are sometimes mistaken for those due to enlarged glands, especially that due to the aorta. It should be stressed that in this situation no glands exist.

The general opacities caused by the hilar regions cover each other in the lateral radiograph. To term the hilar region as a whole pathologically dense a greater degree of density of the hilar region must therefore be demanded of a lateral than of an antero-posterior film.

In interpreting radiographs of children suspected to be suffering from pulmonary tuberculosis much critical care is required; otherwise misinterpretation is inevitable. The enlarged hilar shadow is only relatively rarely due to tuberculous glands. (This depends, however, on the material investigated—on whether, for instance, it consists of children in a general out-patient clinic or those in a contact clinic.) Only shadows with fairly definite outlines and, above all, in situations topographically in accordance with the sites of typical groups of bronchial glands should be considered glandular opacities; whether they are tuberculous or not should then be determined.

Assistance from the use of lateral films may be derived in the following circumstances:

1. An antero-posterior radiograph may be considered as within normal limits; a lateral radiograph may, however, show markedly enlarged hilar glands.

2. An antero-posterior radiograph shows suspicious enlargement of a hilar shadow, or a definite enlarged hilar shadow or shadows, or a vague shadow extending from the hilum into the lower zone of the lung field. A lateral radiograph may detect (*a*) much-enlarged hilar glands; (*b*) a parenchymatous lesion in the plane of the hilar shadow (see Fig. 7 to discover how this is caused); (*c*) a lesion of the middle lobe (consolidation or collapse), with or without involvement of the hilar glands; (*d*) an interlobar lesion (effusion or much-thickened interlobar septum); (*e*) a primary lung focus in addition to enlarged hilar glands, thus confirming the primary character of the tuberculous lesion. (This is of particular importance at the present time in connexion with adolescents owing to the increased incidence of primary infections among them.)

3. Although calcified foci by themselves are of no clinical importance a lateral film, when it shows calcified hilar glands or a calcified lung focus not seen in an antero-posterior film, may confirm the primary character of a lesion seen in an antero-posterior film some months or weeks previously.

4. Interlobar pleurisy is a common accompaniment of glandular tuberculosis, particularly because the primary lung focus is generally situated close to the pleural surface. The septum between the upper and middle lobes is the only one that shows in an antero-posterior radiograph. The septum separating the upper or middle from the lower lobe is seen only in the lateral radiograph, and thickening of these septa or interlobar effusions are clearly seen. The latter two changes may be the only indications of a recent active primary tuberculous process.

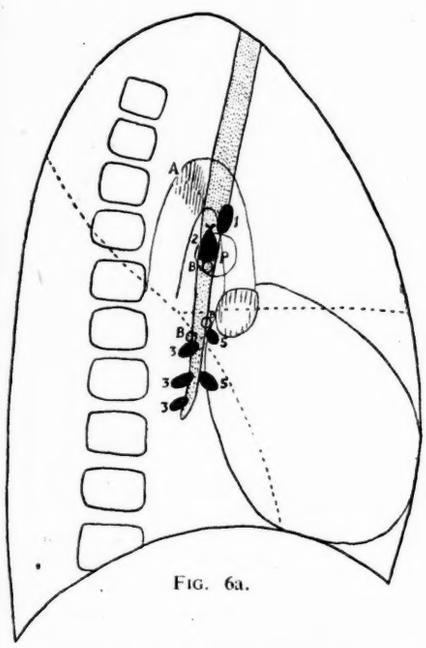

FIG. 6a.

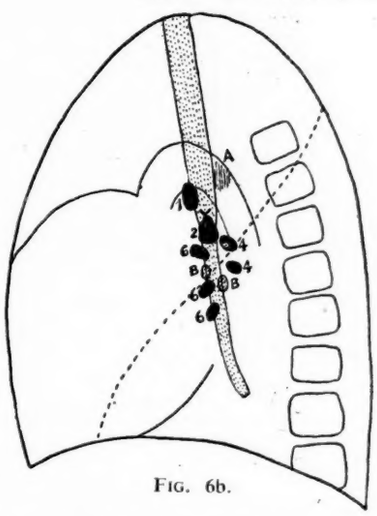

FIG. 6b.

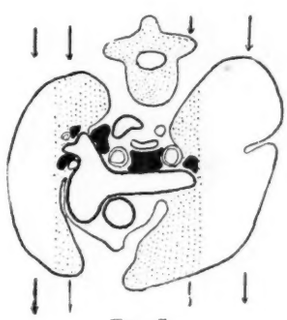

FIG. 7.

FIGS. 6a and 6b.—A, shadow thrown by aorta; P, situation of shadow sometimes thrown by pulmonary artery; B, openings of main bronchi. (Numbering as in Fig. 1.)

FIG. 7.—The shadow of a lesion anywhere in the lungs within the dotted areas will in an antero-posterior film be included in the hilar shadow.

The cases illustrated by Figs. 8a to 11b (among others which cannot be quoted for lack of space) demonstrate the assistance that was derived from the use of lateral films in regard to some of the points indicated above. To lessen the expense of reproduction, contact drawings (reduced in size) are given for the cases; the opacities produced by enlarged glands are shown in black, but the latter does not represent the actual shading of the shadows thrown by the glands.

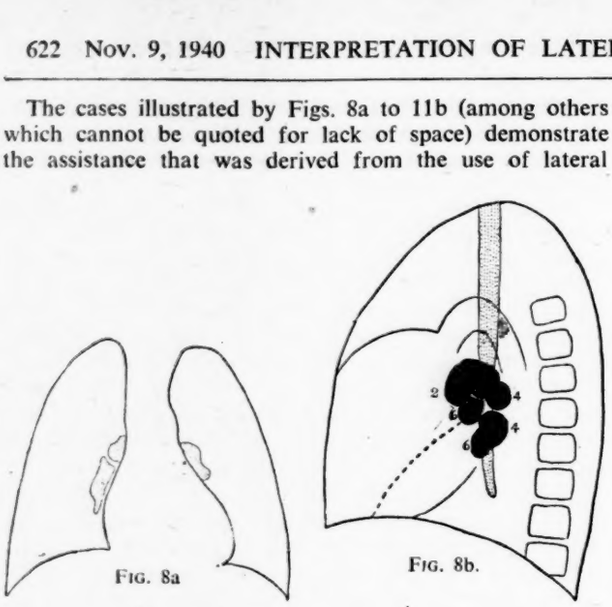

FIG. 8a FIG. 8b.

FIGS. 8a and 8b.—Case 1. A girl aged 4. Father has advanced P.T.; contact broken three months before. Slight cough. Tuberculin test positive. Antero-posterior radiograph within normal limits; lateral film shows mass of enlarged hilar glands. A lateral film taken six months later showed calcified foci only and a thickened interlobar septum.

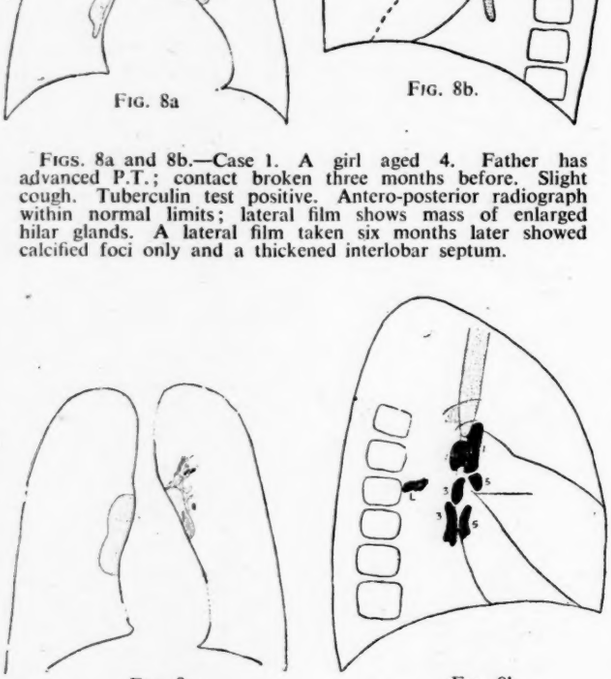

FIG. 9a. FIG. 9b.

FIGS. 9a and 9b.—Case 2. A boy aged 11. Father has P.T.; sputum positive. No symptoms. Tuberculin test positive. Antero-posterior film shows prominent lung markings in area above and to the right of the left hilum with two or three small calcified foci. The lateral film shows clearly the calcifying primary pulmonary focus (L) and the various enlarged hilar glands.

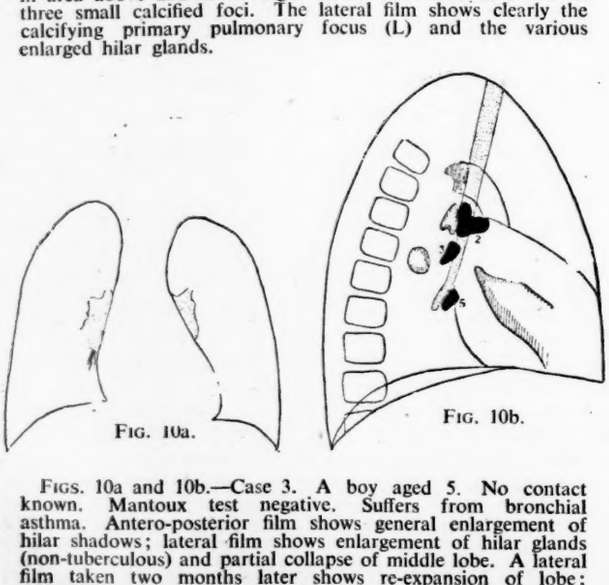

FIG. 10a. FIG. 10b.

FIGS. 10a and 10b.—Case 3. A boy aged 5. No contact known. Mantoux test negative. Suffers from bronchial asthma. Antero-posterior film shows general enlargement of hilar shadows; lateral film shows enlargement of hilar glands (non-tuberculous) and partial collapse of middle lobe. A lateral film taken two months later shows re-expansion of lobe; enlargement of hilar shadows in the antero-posterior film no longer seen. Collapse of lobe presumably due to blockage by secretion of bronchus during a bronchial attack which also caused enlargement of hilar glands.

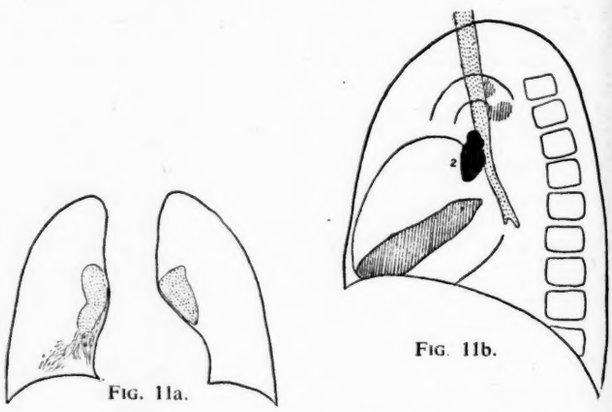

FIG. 11a. FIG. 11b.

FIGS. 11a and 11b.—Case 4. A boy aged 3. Mother has advanced P.T.; brother also has P.T. No symptoms. Tuberculin test positive. Antero-posterior film shows enlargement of both hilar shadows with shadowing in the medial part of left lower zone. A lateral film shows enlarged gland and collapse of middle lobe, presumably due to pressure on bronchus. After nine months' treatment in sanatorium a lateral film shows only calcified glands and re-expansion of lobe.

Summary and Conclusions

The bronchial glands are all-important in the clinical recognition of pulmonary tuberculosis in childhood. Radiological examination of the chest is the most important diagnostic method for the detection of enlarged bronchial glands, particularly in connexion with tuberculosis in childhood. This holds good only if the radiographs are technically satisfactory and are interpreted with caution and due regard to the topography of the bronchial glands, in both the antero-posterior and the lateral view. The help to be obtained from antero-posterior radiographs is limited, and can often be supplemented by the use of lateral radiographs. The anatomical basis for such radiographs is studied in this paper, and the interpretation and help derived from lateral films on this basis are illustrated by case reports.

References

Engel, S. (1926). *Beitr. klin. Tuberk.*, **64**, 468.
—— (1930). *Handbuch der Kindertuberkulose*, edited by S. Engel and C. von Pirquet, p. 314, Leipzig.
—— (1933). *Ergebn. ges. TuberkForsch.*, **5**, 55.

H. T. GROSS (*J. Kansas med. Soc.*, 1940, **41**, 329) records thirteen cases of erysipeloid which occurred between March, 1936, and March, 1939, inclusive among veterinary students at Kansas State College. All save two gave a history of very recent trauma associated with their work. Except for one lesion on the right forearm, all infections occurred on the hands and fingers, involving the right hand in seven and the left in five, and all the lesions had a characteristic appearance. Lymphangitis and lymphadenitis occurred in all but three cases. There were no characteristic reactions of importance. The highest temperature recorded was 100.4°. The leucocyte count never exceeded 10,000. An eosinophilia from 1 to 5% was observed in six cases. The incubation period in eleven cases averaged four days. All recovered with conservative treatment. Except in one case, in which it was thirty-three days, the average duration of the disease was fifteen days.

ADSORPTION OF THE EARLY PRODUCTS OF BOVINE TUBERCLE BACILLI IN RABBITS BY ANTHRACITE DUST

BY

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The late Dr. J. Haldane, in an oft-quoted passage of an address to the South Wales Institute of Engineers in 1923, expressed his opinion that coal dust was inimical to tuberculosis. "It is difficult," he said, "to resist the conclusion that in some way the inhalation of dust in coal-mines tends to prevent phthisis."

In 1931 certain experiments were reported which showed that anthracite dust was capable of adsorbing a relatively large amount of tuberculin *in vitro* (Cummins, Weatherall, and Waters, 1931), a fact substantiated by further experiments (Cummins and Williams, 1938). Though we drew the conclusion that anthracite dust, of which a large amount is inhaled in West Wales coal-mining and in "trimming," must have the effect of adsorbing a great deal of the products of tubercle bacilli in the tissues, we were at that time unable to devise a method of testing this in the bodies of laboratory animals.

Later, however, when engaged upon experiments to show the lesions produced by anthracite and other dusts when inoculated into the lungs of rabbits along with dead human tubercle bacilli (Cummins, 1940)—an effect apparently separate from the adsorption of auto-tuberculin—I perceived that a somewhat similar experiment might serve to show whether the products of living tubercle bacilli were adsorbed or not. It was realized that the amounts of dust and tubercle bacilli might be difficult to adjust, but it was decided to try. The following experiments were therefore put in hand.

Experiment I (December 14, 1939)

Rabbits Nos. 372 and 376 were intratracheally inoculated with 0.3 c.cm. of a living emulsion of extremely virulent bovine tubercle bacilli; Rabbit No. 372 received 0.3 c.cm. of an emulsion containing approximately 0.1 mg., and Rabbit No. 376 the same amount of an emulsion containing 0.01 mg., of bacilli per 1 c.cm.

Rabbits Nos. 374, 371, and 373 were intratracheally inoculated with 0.2 gramme of anthracite dust and 0.3 c.cm. of emulsion of living bovine tubercle bacilli; No. 374 receiving this amount of an emulsion containing 0.1 mg. of the bacilli per 1 c.cm., and Nos. 371 and 373 the same quantity of an emulsion containing 0.01 mg. per 1 c.cm. The amount inoculated was in every case made up to 1 c.cm. The infection was given by means of a hypodermic syringe and needle into the trachea, exposed through a narrow incision for this purpose.

RESULT

Rabbits Nos. 372 and 376 died on January 23 and 14, 1940, respectively, of generalized tuberculosis, there being a "collar" of tuberculosis around the trachea. Rabbits Nos. 371 and 373 were killed on February 7, as both appeared to be very breathless. They were found to have extensive pulmonary tuberculosis as well as typical "collars" around their tracheas. Rabbit No. 374 died of acute diarrhoea and coccidiosis a few days after the inoculation, no visible tuberculous lesions being present, although anthracite dust and tubercle bacilli were seen by the microscope within the lungs. This rabbit is excluded from the experiment as it died from a pre-existing illness too soon to show tuberculous lesions.

Of the four rabbits surviving long enough to show results it is significant that those inoculated with bovine tubercle bacilli alone died of generalized tuberculosis considerably before those to which anthracite and bovine bacilli had been given. The latter were killed about ten days after the death of the second "bovine alone" rabbit, and were found to have much less infection than the former two, a fact which might have allowed of their survival for some weeks longer. The production of "collars" of tuberculous tissue in all four of these rabbits caused interference with breathing and made it clear that another method of introducing the bacilli should be sought.

Experiment II (March 13, 1940)

Authority was obtained from the Medical Research Council for the purchase and maintenance of rabbits for this experiment. The method of introducing the inoculum was as follows in every case: The end of a small rubber catheter was made to fit over a rather wide and slightly bent hypodermic needle, attached to a syringe. This was introduced through the mouth into the larynx, the plunger of the syringe being drawn up so as to demonstrate that the end was in a free air tube and not in the oesophagus.

Rabbits No. 386, 387, and 390 were infected with 0.2 c.cm. of an emulsion of living bovine bacilli of a strength of 0.001 mg. per 1 c.cm., the amount being made up to 1 c.cm. by the addition of sterile saline solution.

Rabbits Nos. 388, 389, and 391 were similarly infected with 0.2 gramme of anthracite dust (under 25 μ, Lessing), together with 0.2 c.cm. of an emulsion of living bovine tubercle bacilli containing 0.001 mg. per 1 c.cm., the inoculum being made up to 1 c.cm. with sterile saline.

RESULT

Rabbits Nos. 390, 387, and 386, infected with living bovine bacilli alone, died of acute generalized tuberculosis on May 10, May 21, and June 18 respectively (see Chart),

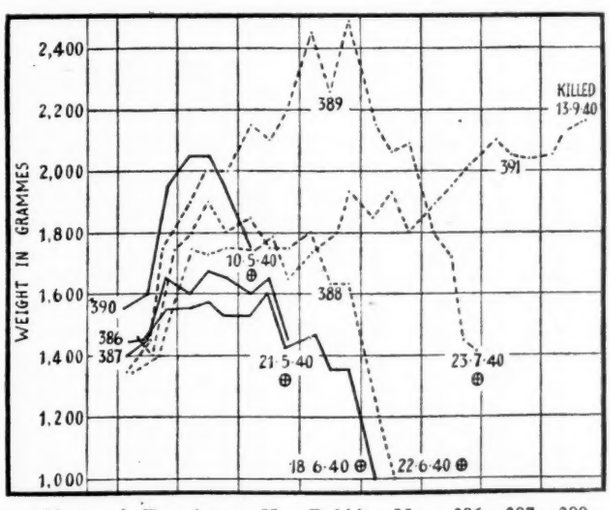

Chart of Experiment II. Rabbits Nos. 386, 387, 390 (bovine); Rabbits Nos. 388, 389, 391 (bovine with anthracite dust).

No. 386 having, in addition to the usual lung and kidney lesions, a miliary tuberculosis of the bowel, suggesting that some of the inoculum had found its way into the intestine. Rabbits Nos. 390 and 387 had no bowel lesions; only massive tuberculosis of lungs and kidneys. It was probably owing to this division of the dose between lungs and bowel that No. 386 lived so much longer than the others.

Rabbits Nos. 388, 389, and 391 survived longer than the three animals receiving living bovine tubercle bacilli alone. Rabbit No. 388 died on June 22 from acute tuberculosis

affecting the lungs and kidneys, which had not, however, involved the intestine. Rabbit No. 389, after gaining weight to a remarkable extent, finally wasted rapidly and died on July 23. It proved to have tuberculosis of lungs, kidneys, and intestines, but the tuberculosis of the lungs, although widespread, was markedly restrained in type. Rabbit No. 391 continued to gain weight until September 13, when, as it had never shown any symptoms of illness during six months, it was killed and examined. No trace of tuberculosis was found in the organs or tissues; but, microscopically, columns of polynuclear leucocytes crowded together, apparently within lymphatics, were observed in certain areas of lung substance, although the lungs were otherwise quite healthy. Anthracite dust was also seen, though not abundantly, in the lung sections examined; and anthracite dust was present in the tracheobronchial lymphatic glands. Dust was to be seen as well in the lungs of Rabbits No. 388 and 389, as also in the walls of the intestine of No. 389. In all three it was in small quantity, and never in the large masses seen when anthracite and numerous dead human tubercle bacilli are introduced into the lungs.

Discussion

The average period of survival of the three rabbits infected with living bovine bacilli was seventy-five days; that of the two rabbits infected with the same dose of bovine bacilli along with 0.2 gramme of anthracite dust, and subsequently dying, was 116 days. This is what might be expected if the anthracite had adsorbed a considerable amount of the toxic substances produced by the tubercle bacilli in the course of their growth. Once the growing tubercle bacilli had been transported to new sites away from the anthracite dust they would, of course, increase rapidly and cause the death of the animal.

The complete freedom from tuberculosis of the third rabbit, No. 391, is difficult to explain. It might, of course, have died of it at a later date, but the absence of signs of tuberculosis in the tissues makes this unlikely. It was not anticipated that any of the animals infected could survive, but rabbit No. 391 appears to have developed enough immunity during the "protected" phase to stamp out its tuberculosis completely.

Conclusions

The addition of a small quantity of anthracite dust to quanta of living bovine tubercle bacilli has led, in five animals, to their survival for considerably longer periods than the five control rabbits receiving bovine bacilli alone, and, in one, to complete recovery up to six months.

This appears to be due to the adsorption by anthracite dust of a proportion of the toxic products of living tubercle bacilli in the tissues.

My thanks, for much help in these experiments, are due to Dr. Enid Williams, Mr. J. Moore, and Mr. J. Taylor. I am indebted to Dr. R. Lessing for the sample of anthracite dust used; to the Medical Research Council for authority to purchase some of the animals employed; and to Prof. J. B. Duguid for permission to work at this subject in his laboratory.

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In a letter to the *South African Medical Journal*, July 27, 1940, Dr. H. Husserl states that during the four-years war of 1914–18, when he was an Army surgeon in the Turkish Army in Asia Minor, he had a patient who had burns "of all degrees" over three-quarters of the body surface. In the absence of any other remedy he applied powdered charcoal and the patient recovered.

CONVULSIVE CARDIAZOL THERAPY IN CARDIOVASCULAR DISORDERS

BY

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In a previous paper (Good, 1940) I demonstrated that convulsive cardiazol therapy may result in the temporary appearance after the convulsion of cardiac abnormalities due to an exhaustion and anoxaemia of the heart muscle, the heart itself undergoing a temporary and varying degree of acute dilatation, with quick recovery from all of these abnormal phenomena. These occurrences can be easily demonstrated electrocardiographically and radiographically, and would seem in themselves to be contraindications to the use of convulsive therapy in patients with diseased or injured hearts. Further, the numerous abjurations of writers on this topic to eschew patients with cardiovascular disease might make one doubly sceptical if one did not reflect that there are no cases on record of catastrophes resulting from convulsive therapy in patients whose hearts are diseased.

The subject is important at the present time—as one can envisage the employment of some quick and effective form of therapy in the mental cases anticipated as the result of air raids—all the more so since it has been found by Sutherland (personal communication in June, 1940) that in some soldiers with certain types of conversion hysteria cardiazol has proved a brief and efficacious method of treatment. In my own short experience of the treatment of similar cases and in psychoneurotic states in which the predominant signs and symptoms of the patient's illness are focused upon the cardiovascular system, more especially on the heart ("the effort syndrome," "disordered action of the heart") the results have been similarly encouraging. There is the additional fact that the incidence of cardiovascular disorders is higher among civilians than among combatants, and thus the decision whether or not to use cardiazol in these cases would be one of moment.

My purpose is to demonstrate that the possibly beneficial results of convulsive therapy in cases of mental illness need not be withheld because of the existence of cardiovascular disease, past or present. To this end six cases are quoted. Only the relevant details are given.

Illustrative Cases

Case 1.—A housewife aged 49 was admitted to hospital on December 15, 1938. She was frail, undernourished, and of sallow complexion. There was no evidence of cyanosis, oedema, dyspnoea, jaundice, or arteriosclerosis. The pulse was regular in rate and rhythm, and the blood pressure was 170/100 mm. Hg. There was cardiac dullness enlarged to four and a quarter inches to the left of the mid-sternal line in the fifth interspace. The sounds were somewhat soft in tone. A harsh systolic bruit at the mitral area was conducted upwards and outwards to the posterior axillary line. ? A soft systolic murmur at the aortic area. There were no signs or history of cardiac decompensation. Cardiazol therapy was started on December 26 with an initial subconvulsive dose of 2 c.cm. Including her last dose on January 30, 1939, the patient received fifteen injections, none exceeding 2.5 c.cm., and she had only one convulsion—from the third dose of 2 c.cm. on December 30—with no immediate untoward result. On the evening of January 7 her breathing became noisy and laboured, and her pulse poor in quality and rapid. Chest examination showed signs which were taken to be indicative of acute pulmonary oedema and which responded after some time to three doses of 1/100 grain of atropine sulphate at four-hourly intervals. The following morning she was conscious. Vomiting was copious in amount, was bilious, and was repeated ten times; jaundice started. On January 16 her

condition deteriorated. Glycosuria and acetonuria appeared, both clearing up with 10 units of insulin given thrice daily half an hour before meals. A trace of albuminuria present on admission had not cleared up, and the jaundice increased. The patient died on February 4 after running a pyrexia of unknown origin for a week and with numerous rhonchi in the chest during the last two days.

Case 2.—A widowed housewife aged 55 was admitted on November 16, 1938. She was sallow-complexioned and undernourished. Typical mental depression, but the presence of eye signs, absent abdominal reflexes and ankle-jerks, and hyperaesthesia of the soles of the feet caused the cerebrospinal fluid to be examined and a blood Wassermann to be made. The latter was positive and the C.S.F. findings were fairly typically paretic. The arteries were sclerotic, with irregular walls. On December 10 20 c.cm. of malarial blood was injected. Malarial therapy was stopped on January 5, after the occurrence of four typical malarial rigors, owing to a somewhat profuse rectal haemorrhage (10 oz.), which was followed in two days by two moderately severe rectal crises. On January 30, as an experiment to see whether her depression (presumably paretic in origin) could be influenced by other than anti-specific measures, she was given cardiazol therapy, despite the fact that her arterial walls were sclerotic and her heart sounds were weakened by the four malarial rigors. She was discharged "much improved" on March 25, and told to report to the out-patient department for anti-syphilitic drug treatment in the first instance. She had received in the wards nine injections of cardiazol, with the production of eight convulsions.

Case 3.—A housewife aged 64 was admitted on January 31, 1939, after having been a complete invalid for the previous eight years, confined to bed either at home or in general hospitals, where she had been thrice treated by physicians of repute for angina pectoris; there seems to be little doubt, therefore, as to the correctness of the diagnosis. Her admission to the mental observation wards was necessitated by the development of mental symptoms. She was a thin undernourished woman with indifferent heart sounds. A course of cardiazol therapy was started on February 1, and altogether twenty-one injections were given, two of which produced a major convulsion. She was discharged on April 5 as a social recovery, with no signs of invalidism. Three months later she was reported as being on holiday and walking on the average six miles a day.

Case 4.—An unmarried female nurse aged 47 was admitted on March 29, 1940. She was thin and of very pale complexion, and had a history of scarlet fever at the age of 19. There was cardiac dullness, enlarged to four and a half inches to the left of the mid-sternal line in the fifth interspace. A rough double murmur was heard over all four cardiac areas, being most marked over the mitral and aortic, and loudly propagated respectively into the left axilla and upwards along the great vessels of the neck, which pulsated visibly. From April 4 to May 25 she received twelve injections, nine of which produced a major convulsion. The effect of two of these convulsions on the heart was especially studied: the cardiac rate remained regular, but the murmurs disappeared for about five minutes after the convulsion, when, upon the gradual slowing of the heart, they returned, a temporary prominence of the murmurs being audible at the aortic area, compared with the other areas. She recovered, and was discharged on May 31.

Case 5.—An unmarried minister aged 50, who had had his left leg amputated through the lower third of the femur during the war of 1914–18, was admitted on December 21, 1928, as a case of paranoid schizophrenia, with alcoholic and depressive episodes. During the first of these latter he attempted suicide in 1924 by shooting himself with a revolver, the bullet being eventually located an inch to the left of the vertebral column. Sir William Macewen operated and found that the bullet track had involved the left ventricular wall; the pericardial sac was opened to facilitate the stitching of the wound (and also, presumably, to clear out the effused blood). At this operation an inch of the sixth rib in the mid-scapular line was resected, and on April 25, 1940, when cardiazol treatment was begun, this gap had closed to half an inch. Owing to his restless destructive habits (including attacks upon his artificial limb) the patient had been practically confined to bed for several years before treatment was undertaken. This treatment consisted of twelve injections, each of which produced a major convulsion. Bradycardia of approximately 30 per minute occurred after one convulsion.

Case 6.—A married civil engineer aged 60 was admitted to hospital on July 14, 1937. His chest was markedly emphysematous and asymmetrical, the left side being more prominent than the right. Air entry at the right base was poor. He had a long history of respiratory trouble. There was cardiac dullness obscured by emphysema, with short and sharp cardiac sounds. On admission his blood pressure was 120/80 mm. Hg, and between then and the beginning of treatment it fluctuated considerably, and at one time was 98/68. During the same period he had spells in which the cardiac rate became irregular owing to the occurrence of extrasystoles. At the time of beginning treatment his blood pressure was 150/90, and his heart rate was comparatively rapid and irregular as a result of extrasystoles. Electrocardiographic examination was confirmatory, and in addition a degree of myocarditis was reported. Cardiazol therapy was not advised on account of the heart condition. However, the patient received twenty injections between January 27 and March 12, 1940, fifteen of them each producing a major convulsion, after most of which (as determined by auscultation) the heart remained regular in rate for about two minutes. The pulse during the same interval was very poor in quality. About February 22, 1940, the cardiac rate became permanently regular and the cardiac sounds improved in quality.

Discussion

The foregoing cases have been specially chosen, as each gave evidence of a considerable degree of cardiovascular disorder. Many other cases which presented less marked though similar abnormalities when treatment was begun could have been cited. Treatment in all save Case 1 was terminated because of mental improvement.

In none of the cases, not even in Case 1, was there any evidence that treatment had worsened the already damaged cardiovascular system. Indeed, signs to the contrary were forthcoming. Case 6, for instance, showed clinical improvement in that the heart sounds remained permanently regular and the pulse of good quality until temporary dismissal from hospital on April 1, 1940.

Case 1 is quoted because it was the first case showing cardiovascular disorder to be convulsed by me, and there is no reason to believe that the solitary cardiazol convulsion that occurred in any way contributed to the patient's death five weeks later. (Compare Case 4, in which nine convulsions occurred despite a worse cardiac condition.) It is also doubtful if the numerous rhonchi which filled her chest before she died were the result of an acute pulmonary oedema, as, contrary to the experience with her first attack, the chest condition did not improve with atropine. In any case, acute pulmonary oedema may occur as the result of the convulsion without any evidence of cardiac disease. The progressively deepening jaundice in this patient pointed to some toxic condition, either affecting or originating in the liver, as the cause of death. Unfortunately, permission for a post-mortem examination was not received.

It might be objected that the presence of albuminuria in Case 1 is in itself a contraindication to cardiazol treatment. I have found to the contrary, however. I have now treated a few cases in which there has been no increase in the albuminuria (not, however, in itself an indication that no superadded damage was wrought on the kidneys), and in one case the albuminuria was absent at the end of treatment, although it is not suggested that the cardiazol caused its disappearance.

With regard to body tissues generally, it is difficult to see, on purely theoretical grounds alone, why damage of any description should result and thus constitute a possible

contraindication. Certainly from a practical point of view any such contraindications are non-existent, and I have been restrained in only one case—a heart case in which compensation was poorly established. From the cardiovascular point of view it is not apparent why organic disease of this system, provided it is well compensated, should contraindicate the use of convulsive therapy, even though the heart be recently weakened as in Case 2, in which malarial treatment had been given a short time before.

It is not easy to conceive of a method that will accurately estimate the increased work that is thrown on the diseased heart during the one or two minutes of the convulsion. At a very outside estimate, however, it should not exceed, say, one hour's heavy exercise (as indulged in many times over in the working day by a manual labourer with heart disease but seeking admission for a complaint originating in an altogether different system, both cardiovascular disorders being found accidentally and presumably existing for a considerable time before being discovered) or the day's work of a nurse (Case 4), with the considerable amount of physical strain entailed and the superimposition of a further strain from a hyperexcitable disposition extending over years on a heart presumably diseased. There is, however, the essential difference between the additional work imposed on the heart by normal effort and that endured from the cardiazol convulsion; for in the latter the increased work occurs under anoxaemic conditions, as during the convulsion the patient either does not breathe or takes at the most one or two short gasps when the clonic stage of the convulsion is nearing its end. That such conditions do undoubtedly affect the heart is shown in my previous paper, but the affection so resulting is of a temporary nature, though others have arrived at a different conclusion (Schmitt, 1939).

Summary

The main purpose of this paper is to demonstrate that cardiovascular disorders of even a severe degree—provided they are well compensated, and whether existing alone or in the presence of advancing years and of diseases of other systems—are not contraindications to the employment of convulsive therapy. Further, electrocardiographic examination in these cases provides no criteria indicative of how well or how badly the patient will stand up to the convulsion.

I am indebted to Dr. A. D. Briggs, superintendent, Dr. A. Dick, visiting psychiatrist, Southern General Hospital, Glasgow, and to Dr. A. MacNiven, superintendent, Glasgow Royal Mental Hospital, for permission to publish these cases. I am also indebted to Dr. R. G. Lendrum, Western Infirmary, Glasgow, for his kind collaboration in connexion with the electrocardiography.

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R. Chevillard (*Thèse de Paris*, 1940, No. 314), who records twenty-two cases, one of which is original, states that owing to failure to diagnose correctly the extent of an injury a foreign body may penetrate the orbit and remain there for years without being recognized. The fact that an intra-orbital foreign body may remain unsuspected depends on its nature, size, degree of asepsis, and, most of all, on its location. As *x*-ray examination is the only certain means of revealing the presence of an intra-orbital foreign body, every injury to the face requires a radiographic examination whenever the penetration of a foreign body is possible, even if penetration appears unlikely. The symptoms which, after a variable time, reveal the presence of a hitherto unsuspected foreign body are sepsis or motor paralysis. When these symptoms appear extraction of the foreign body is urgent. The operation of choice is orbitotomy.

THE BENZYL BENZOATE TREATMENT OF SCABIES

BY

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Scabies, which in normal times is regarded as a trivial disease, has been raised to a position of considerable importance during the past year owing to the outbreak of hostilities. The massing of large numbers of troops under cramped and unsanitary conditions, the evacuation of children from slum areas, and the overcrowded and unhygienic sleeping arrangements in public air-raid shelters provide perfect conditions for a wide dissemination of acarus infection.

According to the official history, half of the admissions to hospital from the armies in the field during the war of 1914–18 were due to lack of cleanliness and to infestation by vermin. Scabies was by far the commonest of these diseases. Uncomplicated scabies was found to be rare, nine-tenths of the total number of cases showing the presence of boils, secondary infected sores, or pyogenic dermatitis. It is also recognized that the scratching of the skin caused by the intense itching gave impetus to the spread of lice-borne infections such as trench fever, relapsing fever, and typhus.

Search for a Non-irritant Sarcopticide

A constant search for an effective non-irritant sarcopticide has continued for many years, and though a large number of drugs have been recommended, sulphur in its various forms has continued to be widely used. This agent, especially in the form of the ointment, is dirty and tedious in application, and often produces a dermatitis worse than the disease it is intended to cure. Indeed, the use of sulphur has coloured almost the entire field of the therapeutics of scabies, and all the well-known methods of treatment have this substance as their basis. The sodium thiosulphate–hydrochloric acid method as advocated by Huber (1938) depends on the reduction of the thiosulphate by the acid, with the production of a fine deposit of sulphur on the skin. Six applications are necessary to produce a cure. McKenna (1933) recommends "mitigal," a proprietary sulphur-containing lotion, as the safest treatment, and states that a cure can be obtained in ten days. The kathiolan of Ehlers-Marcussan, which is said to bring about a cure in twenty-four hours, is recommended by Roxburgh (1936) and others. These methods, however, as with all sulphur remedies, often cause a disagreeable and resistant sulphur dermatitis, as well as being uncertain in their action.

The Benzyl Benzoate Method

Although many sulphur-free remedies, such as creolin, rotenone, and others, have been used, the only one to achieve certainty of action together with ease and rapidity of application is the benzyl benzoate method introduced by Kissmeyer (1937). This treatment, which has been adopted as a general routine in Denmark, has failed to achieve in this country the recognition that its qualities merit.

In a series of 100 cases of scabies occurring in a naval establishment, 80% of which were infected and of longer than two weeks' duration, treatment by one application of benzyl benzoate lotion proved completely successful. No unpleasant after-effects were noted, except a slight generalized burning sensation, which usually lasted for about fifteen minutes. In 3 cases of gross pyodermatitis

due to a scabies infection of very long duration the application was repeated after an interval of four days owing to a recurrence of nocturnal itching. This resulted in the disappearance of all irritation, and a rapid response of the septic skin condition to simple treatment. Except for a slight increase of the burning sensation no unpleasant effects were noticed. In none of the cases was there any irritation of the skin following this treatment, and relief from itching was invariably instantaneous. All cases treated were examined at least twice during the following two weeks, during which time no relapses occurred.

In order to investigate the effect of repeated applications of benzyl benzoate on the skin the following test was performed. The lotion was applied to a small area of the left forearm of several healthy patients, and repeated at intervals of five days during the next four weeks. In none of these controls did any form of local or general irritation of the skin occur.

The Lotion.—This consists of equal parts of benzyl benzoate, industrial spirit, and soft soap (*B.P.*, 1932). In the original formula isopropyl alcohol was used as the vehicle. It has been found that substitution of this by industrial methylated spirit does not detract in any way from the efficacy of the treatment, and the reduction in cost is considerable. The amount of this lotion used in the complete treatment of one case is 1½ oz.

Method

Anoint the body with soft soap, rubbing it with special care into those parts commonly attacked by the acarus (i.e., the groins, inner aspects of thighs, abdomen, axillae, wrists, and between the fingers). Then soak for ten minutes in a bath at 100° F., the patient rubbing the affected areas thoroughly during this time. While the body is still wet apply the lotion vigorously for five minutes by means of a pig-bristle shaving-brush. (This must be done very thoroughly, and all parts must receive attention, particular care being paid to the infected areas.) Allow the lotion, and the lather produced, to dry on the skin, and again apply the lotion vigorously for a further five minutes, then dry the body with a towel.

The patient now resumes the clothes worn before treatment. Twenty-four hours later a bath is taken and clean clothes are put on. The discarded underclothing and the bedclothes used by the patient should be sterilized by boiling. It is important that the close contacts of the patient—that is, other members of the family or, in the case of a large establishment, those sleeping in close proximity—should be treated on the same day, even though they show no sign of the disease.

It must be emphasized that those portions of the skin showing severe pyogenic infection must be treated as energetically as the unabraded areas.

Commentary

It will be seen that this mode of treatment presents many advantages over others in general use at the present time. The patient is ambulant throughout, and is subjected to a minimum of inconvenience and discomfort, no matter how severe the infection. The sarcopticidal action of benzyl benzoate is immediate and reliable, and no post-therapeutic irritation of the skin results. Pyodermatitis due to infected scabies can be thoroughly treated and rapidly cured. The whole treatment is completed in thirty minutes, at the small cost of fourpence per head.

In the small series of cases described this mode of treatment has proved to be entirely satisfactory and far in advance of any of the methods I have previously used. I have no hesitation in recommending it as safe, reliable, and rapid.

I am indebted to Surgeon Captain J. Bruce Ronaldson, R.N.V.R., for permission to publish this paper, and to Leading Sick-berth Attendant W. Haythornthwaite for his assistance.

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A ONE-LAYER OPERATION FOR INGUINAL HERNIA

BY

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The excellent paper by Mr. J. F. O'Connor on the treatment of hernia which appeared in the *Journal* of July 27 (p. 113) has encouraged me to write these notes. The simple operation described here for the radical cure of inguinal hernia has been performed by me in many hundred cases during the past thirty years, and in only two have I been able to trace authentic evidence of recurrence. This does not mean that there have not been other recurrences. The lack of evidence of these may be due partly to the fact that there was no follow-up of after-histories and partly to the fact that I never stayed in any one locality for long until I went to Singapore. There I worked for thirteen years, and most of my inguinal hernia operations were performed on local residents, European and Asiatic, some of the hernias being of large size; yet here no recurrences except the two mentioned above were brought to my notice.

Theories of the Cause of Inguinal Hernia

As several theories of the cause of inguinal hernia are held and various operations have been described for its cure, no standard operation has yet been adopted for it, so that these notes may at least provoke thought and criticism.

When, during the last war, I was for a time in charge of the hernia cases in the Cambridge Hospital, Aldershot, many of the admissions were for recurrent inguinal hernia. This was remarkable, as the patients were all strong healthy young recruits, and yet most of the recurrences followed only a few weeks after a radical operation for hernia. A second operation revealed no trace of suture material. In all of them an attempt seems to have been made to restore the valve-like mechanics of the part. And in these favourable and straightforward cases it is hardly likely that shortness of convalescence need be considered as contributory to recurrence.

During development certain structures travel out of the abdominal cavity through gaps or holes in the parietes which normally become shut or closed; but in man development seems commonly to become arrested, and it is generally at these weak gaps or holes in the abdominal wall that hernia occurs. The abdominal wall may be compared not inaptly to a rubber tyre, the covering corresponding to the abdominal muscles and the canvas lining to the fibrous aponeuroses and fasciae. However thick a tyre, the rubber covering will not prevent a "blow-out" if the canvas lining is defective or damaged; and similarly the abdominal muscles, however strong, will not prevent sooner or later a hernia if the fibrous layers or rings are defective. In support of this are several indisputable facts. Hernia is commoner in men than in women, though male muscles are stronger than female.

It occurs mostly in the prime years of life when the muscles are at their optimum strength. Nor can muscles be blamed for umbilical and linea alba hernias, in which they play no part. Further, I have not met with any case of inguinal hernia indubitably caused by damage from laparotomy to the nerve supply of an abdominal muscle, nor with a proneness to hernia in paraplegia involving the lower abdominal muscles, nor in general muscular wasting from illness.

The theory that in many acquired indirect adult inguinal hernias the presence of a pre-existing sac is an important cause has little, I submit, to support it, for the following reasons. In all monkeys and apes the processus vaginalis persists as an open sac, but in them hernia does not occur, and in man there is found not uncommonly a persistent processus without hernia having developed. Again, in femoral and some other varieties of hernia a pre-existing sac never occurs. Besides, the sac theory does not explain "infantile inguinal hernia," which may occur in adults with a new sac at the sides of an existing processus closed above. Further, I have not met with an acquired adult hernia that from the first onset undoubtedly extended into the scrotum, though such extension may be affirmed by the patient when insurance policy or imperfect observation is the more probable explanation.

The cause of indirect inguinal hernia therefore would appear to be the weakness or excessive patency, congenital or acquired, of the internal ring, and of direct inguinal hernia to be the weakness of the aponeuroses.

Technique of the One-layer Operation

To close incisions through the abdominal wall and to repair defects in it, it is in my view important that attention be paid not to the muscles but to the accurate suturing together or overlapping of clean fascia to fascia. As in inguinal hernia there is plenty of local fascia to repair all defects, elaborate operations such as filigrees, fascial grafts, and fascial sutures are unnecessary. The operation described here is based on this principle of fascia to fascia, and is suitable for all varieties, including direct, indirect, recurrent, and the largest inguinal hernia. It is performed in the following manner.

The usual incision is made, except that it extends from near the anterior superior spine to the pubis. The external oblique aponeurosis and Poupart's ligament are well exposed and cleaned of all fatty and areolar tissue, and the external oblique is incised from the external to a point opposite the internal ring. The cord is dislocated from its canal and freed, particularly at the pubic end. The sac is dealt with in the usual way, tied high up, and excised. It might be noted that as a general rule when the sac is thin the hernia is of recent date, and when the sac is thick it is of old standing. In direct hernia I usually repair the abdominal wall without opening the bulging sac. All fatty tissue clinging to the canal and cord is removed and the abdominal wall repaired with one layer of interrupted sutures, sometimes using fine silk in large and in old-standing hernias. It is carried out as follows.

Starting at the outer end of the wound, and as far as the internal ring, there are inserted and tied three or four Lembert stitches which take a wide and deep bite of the external oblique aponeurosis above and a wide bite of Poupart's ligament below so as to lace them together. The cord is then lifted up and a finger inserted into the canal to ascertain the position of the external iliac artery, when, with the finger still guarding the artery, the next and important through-and-through stitch is inserted close and internal to the cord, taking above a wide and deep bite of the external oblique and underlying aponeuroses and below (with the lower cut edge of the external oblique drawn down) a wide area of Poupart's ligament. It is important that this stitch be so placed that when tied the rings will not be left too large or yet too small, when pain and swelling of the testicle will occur. Two or three more stitches are similarly inserted as far as the pubis, care being taken not to wound the external iliac vein. These stitches are then tied under the cord, thus obliterating completely the original canal. The new canal is quite short, straight, and non-valvular, with the newly formed close-fitting rigid external ring exactly over the narrowed rigid internal ring. The cord will then lie on and be superficial to the external oblique. The skin wound is closed in the usual way. A firm spica bandage is applied, this being worn for six weeks with the scrotum supported in a suspender, though the patient is allowed out of hospital in from two and a half to three weeks with instructions to bend well forward when straining at stool and to support the wound with his hand when wanting to cough.

Clinical Memoranda

Benzedrine in Treatment of Morphine Addiction

While most of the literature on the treatment of morphine addiction devotes much space to the actual withdrawal of the drug, the convalescent stage immediately following the "complete withdrawal" is generally considered to be of secondary importance. Perhaps it is at this particular period that the seeds of frequent relapses are sown. I have found the administration of benzedrine during early convalescence an invaluable aid in combating that physical and mental inertia which is a common factor in all cases of drug addiction when recovering.

My reasons for trying out this drug were: (1) I had come to the conclusion that once a patient had been cut off from morphine there would be precipitated an "allergic response" owing to the disturbance of the vago-sympathetic balance, directly due to prolonged fears and emotions in various forms. Now, adrenaline is administered in allergic diseases and benzedrine is structurally related to adrenaline. (2) Ostromislensky considers morphine addiction an example of allergy. Here, then, was a case for the trial of adrenaline, not during but *immediately following the complete withdrawal* of morphine. But as stimulation of the sympathetic and central nervous systems was desirable in order to restore the already disturbed vago-sympathetic balance, benzedrine was to be preferred to adrenaline. (3) It has been shown that a large number of alcoholics and morphine addicts belong to the recurrent type of manic psychotics, and as benzedrine is already widely used in certain depressive conditions there was no reason why it should not be tried on morphine addicts. The results fully justified my expectations.

Below are given particulars of a typical case in which benzedrine was administered.

An Illustrative Case

The patient, a schoolmaster aged 45, had been taking morphine by hypodermic injection for four years, the total daily intake being 10 grains. This amount was gradually reduced, and after ten days his appetite improved and he was able to sleep without hypnotics. Thereafter the usual protracted convalescence began, the leading symptoms being inability to concentrate and disinclination for any sort of physical exercise. A fortnight after the complete withdrawal of morphine 5 mg. of benzedrine was administered twice a day, on rising and at noon. A marked improvement was noticeable. He was easily induced to exercise and to undertake light occupation. On the fifth day 10 mg. of benzedrine was given twice, on rising and at noon, but this was reduced to 5 mg. as it interfered with his sleep. After a fortnight the benzedrine was stopped for a week. Thereafter 10 mg. was given twice a day for ten days, with an interval

of seven days' rest, and it was finally discontinued at the end of two months.

A remarkable feature of the case was the complete absence of physical and mental inertia. Further, there was no inclination for the patient to fall back on alcohol as a stimulant, a recourse which almost without exception leads to a relapse. The benzedrine did not produce insomnia, nor did it cause any loss of appetite. The quick return to physical well-being and mental alertness was most marked.

Trowbridge. H. CECIL DUCKWORTH.

Acute Periarticular Rheumatism treated successfully by an Autogenous Staphylococcal Vaccine of Intestinal Origin

The use of organisms of intestinal origin for making autogenous vaccines in presumably infective "rheumatic" cases is well known. It is often regarded by sceptics as a grossly unscientific procedure. The object of reporting this case is to produce as nearly as possible clear-cut scientific evidence of its value in at least one instance. The case was one of severe periarticular rheumatism with fever, and was treated by an autogenous vaccine made from a single organism, with remarkably effective results. I believe that such evidence as this is of real value and should convince many, despite the fact that one swallow does not make a summer. The case was observed by two medical men, one of them a near relative of the patient (the others being Mr. E. Wilson Hall, surgeon to the Princess Alice Memorial Hospital, Eastbourne), who was an excellent independent witness and who has kindly supplied the clinical notes here set forth.

CASE REPORT

The patient, a lady aged 69, had not previously suffered from "rheumatic" affections. All her teeth had been extracted twenty years ago. Her health had been fair, although she had never been robust, especially since a severe accident some twelve years ago. She had always been troubled with flatulence and dyspepsia.

Before she became acutely ill she had been suffering for two or three months from inflammation of individual joints of her fingers, hands, and wrists. A joint would become painful and very stiff, swollen, and hot. After a varying time such a joint would recover, only to be followed by similar conditions in a fresh joint. At this time she was taking salol internally, and iodex or antiphlogistine was being applied externally. After a period of fluctuating improvement and recrudescence her condition rapidly became worse. Several joints of the fingers and wrists became affected at the same time. Radiographs of the hands revealed that the inflammatory condition was periarticular and that the joints themselves were not apparently affected. She was at this time given iodine internally, and diathermy was tried for the joints. Then her shoulders, knees, and ankles became stiff and painful, and she developed a mild pyrexia. The tongue was furred, and there was nausea and loss of appetite; her heart sounds were feeble and a mitral regurgitation bruit was present; the pulse was feeble and rapid (about 100); and she had attacks of breathlessness and feelings of faintness. Her hands became so crippled that she could only feed herself with difficulty and was unable to knit or sew. All movements were painful, and walking was difficult.

It was at this stage that the autogenous staphylococcal vaccine was prepared. The initial doses were small, and for a while no improvement took place. But as the dosage was gradually increased so she gradually improved. The evening temperature, which for a long time persisted at about 99.8°, slowly came down to subnormal. The tongue cleared, the appetite returned, the pulse improved, and the feelings of breathlessness and faintness became less marked. All this time a steady improvement in the joints took place.

After about two months' treatment with the vaccine she was remarkably better in every way. The joints had become normal in appearance, the swelling and pain had gone, and she was able to use her hands normally and to walk about without pain. Eight and a half months after recovery there had been no signs of a return of the illness.

PATHOLOGICAL INVESTIGATIONS

On September 13, 1937, a blood count showed: red cells, 3,650,000 per c.mm. (diameter 7.6 μ); haemoglobin, 80%; colour index, 1.09; leucocytes, 14,800 per c.mm.—mature neutrophils, 66% (9,768); embryonic neutrophils, 10% (1,480); lymphocytes, 23% (3,404); monocytes, 1% (148). Anaemia, tending to be megalocytic and moderate in degree, was present, and there was a well-marked inflammatory leucocytosis. Blood culture was sterile. Throat swab cultures showed occasional colonies of pneumococci and *Micrococcus catarrhalis*.

On September 14 the urine was slightly turbid, was neutral in reaction (*p*H 7.0), had a specific gravity of 1007, and showed a trace of albumin. The centrifuged deposit contained a few epithelial cells only, and cultures were sterile. Cultures of the faeces on MacConkey's medium revealed *B. coli communis* both on the first direct plating and on the second plating of subculture from peptone water. Cultures of the faeces on human blood agar gave *B. coli communis* on the first direct plating and the second plating of subculture from glucose broth. The third plating of subculture from glucose broth revealed the presence of *B. coli communis* and *Staph. albus*.

Twenty-three doses of the autogenous vaccine were given as follows:

	Dosage		Dosage
1st day	5 millions	Intervals: 7 days	125 millions
Intervals: 3 days	10 ,,	7 ,,	150 ,,
4 ,,	30 ,,	7 ,,	175 ,,
10 ,,	40 ,,	7 ,,	200 ,,
7 ,,	50 ,,	7 ,,	225 ,,
8 ,,	50 ,,	7 ,,	250 ,,
7 ,,	50 ,,	7 ,,	250 ,,
7 ,,	25 ,,	7 ,,	250 ,,
7 ,,	50 ,,	21 ,,	125 ,,
8 ,,	75 ,,	14 ,,	125 ,,
7 ,,	100 ,,	14 ,,	125 ,,

A very useful procedure for recovering the faecal aerobic flora was tried. It was found that incubation in glucose broth leads to a lowering of the *p*H of the medium, which allows the streptococci, staphylococci, and acidophilus types to appear in the subcultures but restrains the coliform organisms. Eventually all organisms are replaced by a pure culture of acidophilus bacilli when the *p*H has fallen to a level of 3.6 to 3.8, but the point at which this occurs is variable.

DISCUSSION

Since other and varied forms of therapy had been tried without success, the improvement is so closely correlated with this single-organism vaccine treatment that there cannot be much doubt that the causal organism was indeed the white staphylococcus isolated. There can be little question of protein shock, inasmuch as no reactions were encountered.

The possibility of non-specific therapy hardly arises, because of the very low dosage employed; and if it is mere coincidence, why was improvement delayed until vaccine therapy was tried? Moreover, improvement ran parallel with increased dosage. Had the soulless scientific method been followed the vaccine should have been stopped so as to see if any recurrence set in, and then have been resumed to complete a cure; but humanitarian reasons forbade this. At any rate, the evidence for the *Staph. albus* as causal or effective agent in this case is almost "cast-iron."

The organism was grown on human blood agar, not on a "chocolate" medium. I am informed that a similar therapeutic coccus is sometimes isolated from MacConkey's medium in such cases.

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J. M. Frawley (*J. Pediat.*, 1940, **16**, 18) records his observations on twelve children who were given nasal instillations of filtered washings taken direct from the respiratory passages of patients with whooping-cough. In all but four there was no noticeable reaction. Two developed coryza and cough, one had a nasal discharge and cough of five days' duration, and one a nasal discharge and cough which lasted for ten days, but in none did any symptoms resembling pertussis occur.

Reviews

THE SALVAGE OF MUSCULAR ACTION

The Action of Muscles, including Muscle Rest and Muscle Re-education. By Sir Colin Mackenzie, M.D., F.R.C.S., F.R.S.Ed. Reprinted from the second edition. Biographical note by C. V. Mackay, M.D., F.R.A.C.P. (Pp. 288; 100 illustrations, with portrait. 12s. 6d. net.) London: H. K. Lewis and Co., Ltd. 1940.

Sir Colin Mackenzie, Director of the Australian Institute of Anatomy, Canberra, died in 1938 at the age of 61, leaving behind him a host of friends and many unfinished projects. Sir Colin, as he became in 1929, was not cast in the mould of conventional men, and his publications—particularly the *Action of Muscles*, by which he made himself known to the orthopaedic world in 1918—reflect his strong individuality. His cousin, Dr. Charles Mackay, who was intimately associated in all Mackenzie's inquiries, was rightly guided in refusing to touch the author's text, and has reprinted the present edition from that of 1930—the last prepared by Sir Colin. The *Action of Muscles* is a personal record of the principles and opinions which the author applied to the restoration of impaired muscular action and the results he obtained. These principles were based on those taught by Sir Robert Jones and ultimately derived from H. O. Thomas. But Mackenzie gave his peculiar bent to them. "He was of pure Highland descent—a piece of Scotland transplanted to Australian soil," says his cousin. Much which passed with him as "self-evident truths" were not at all evident to some of his critics. Nevertheless there can be no question that, whatever may befall his principles, his theories as applied by him were crowned with success. Each muscle to Mackenzie was a personal invalid which had to be coaxed back to life and health. Young orthopaedic surgeons will do well to add this book to their library.

ERRORS AND FAULTS IN UROLOGY

Les Erreurs et les Fautes en Urologie. By L. Strominger. Preface by Prof. G. Marion. (Pp. 176. 45 francs.) Paris: Masson et Cie. 1939.

The first chapter of this instructive book deals with the philosophical aspect of truth and error. Other chapters treat of errors in symptomatology, diagnosis, prognosis, treatment, and, finally, radiology, the easy style partly compensating for the entire absence of illustrations. The author pointedly remarks that it is human not only to err but also to pass over one's errors in silence, as observed at meetings of learned societies! Urological errors, he says, are committed less by urologists than by surgeons. Other causes of error are over-specialization and too early specialization uncorrected by wide culture, and also incomplete or unmethodical examination of the patient. He has seen treated medically a large number of pleural effusions that were really secondary to perinephric abscesses, the evacuation of which was followed by cessation of pleural manifestations. Coexisting *B. coli* bacilluria often masks renal tuberculosis and stone, and even neoplasm. The many causes of renal colic, besides stone, need consideration, and we must remember its simulation of intestinal obstruction, appendicitis, and perforated peptic ulcer.

The statement on page 80 that tubercle bacilli can pass through a non-tuberculous kidney is not in accord with the latest findings of microscopical pathology. One also ventures to dispute the dictum on page 82 that the association of renal lithiasis with renal tuberculosis or neoplasm is not exceptional; and to doubt the statement on page 103 that cystoscopy gives more information about bladder growths than does cystotomy. One also doubts Janet's conclusion that 80% of young people have had gonorrhoea before marriage, and the statement on page 166 that at least 30% of urinary stones are not demonstrated by radiography unless revealed by the injection of contrast media. But one may agree with the quotation from André, that in vesical carcinoma patients are killed by a false label of cystitis, and with the author's remarks that, while full credit should be given to laboratory investigations, prognosis is best based on clinical grounds, and that clinical observation remains the basic element in therapeutic decisions.

Absorbing the wisdom packed into this book may help the diligent reader to confound the humiliating epigram (p. 164) that the best way to avoid mistakes is to make them.

CARDIOVASCULAR-RENAL DISEASE

Cardiovascular-Renal Disease. A Clinicopathologic Correlation Study emphasizing the Importance of Ophthalmology. By Lawrence W. Smith, M.D., Edward Weiss, M.D., Walter I. Lillie, M.D., Frank W. Konzelmann, M.D., and Edwin S. Gault, M.D. (Pp. 228; illustrated. 20s. net.) New York and London: D. Appleton-Century Company.

In this book an attempt has been made to study, as a group, the various syndromes in which arterial and renal disease may coexist. The five authors comprise three professors of pathology, a professor of medicine (Edward Weiss), and a professor of ophthalmology. There is nothing here that can be termed original, as the authors themselves say in the preface, except for the pooling of medical, ophthalmological, and pathological experience. This in itself would be no drawback if the book presented in a clear and readable form a summary or survey of information which can elsewhere be obtained only by reference to original papers, but we cannot say that this has been achieved in a completely successful manner. From the beginning one finds no clear definition of the scope of the work. The main conditions dealt with are essential hypertension, senile atherosclerosis, and nephritis. The terminology adopted is orthodox, but is sometimes used in a misleading way. For instance, pregnancy toxaemia and pyelonephritis are rightly included as causes of hypertension, but they are dealt with under the section headed "nephrosis," and the section on essential hypertension has the subheading "nephrosclerosis," which most clinicians do not consider a synonymous term. The nomenclature is further complicated by the frequent use of the term "cardiovascular-renal disease," when it is not always clear how much the authors mean to include under that heading. This may account for an apparent contradiction to be found in the first few pages. On page 3 we learn that *every other* individual in the United States past the age of 50 dies of cardiovascular-renal disease, and on page 6 that essential hypertension is responsible for about *one-fourth* of all deaths after the age of 50 in the United States. Presumably the other fourth die of such conditions as coronary sclerosis, but this is not made clear, and the authors do not elsewhere include coronary sclerosis with normal blood pressure in "cardiovascular-renal disease," as it is not described in any of their chapters. It is in this kind of way that the reader, instead of getting a clear mental picture of the subject in hand, finds himself pausing to determine what exactly is being described.

The pathological sections are well written, with really excellent illustrations. The pictures and descriptions of retinal changes in the various types of hypertension are also first class, but the book is lacking in really clear accounts of the clinical features of the diseases described. Instead of these there are records of cases, but these are more difficult to follow and are not always well chosen.

Thus, of the two cases illustrating malignant hypertension one was in a woman aged 33 who "estimated that she was three months pregnant at the time of admission." No further comment is made on this even in the post-mortem report, and there is no hint whether the authors considered pregnancy to be a factor in her illness. The other case is also atypical from the clinical point of view.

To sum up, it seems that despite valuable material the book is not sufficiently clear and concise to attract students or general physicians, and not sufficiently complete or original to fulfil the requirements of the specialist.

THE BACKGROUND OF NEUROLOGY

Problems of Nervous Anatomy. By J. Boeke, LL.D. Glasg., Professor of Histology and Embryology, University of Utrecht. (Pp. 164. 7s. 6d. net.) London: Oxford University Press. 1940.

Professor Boeke is well known to British neurologists as a member of that Dutch group who have done so much to clarify our understanding of the anatomy and physiology of the nervous system. In three lectures delivered in England in 1937 he examines first how the nervous elements innervating the skin and giving us a many-sided contact with the outer world behave under normal and abnormal conditions. These comprise chemical stimulation, degeneration, and regeneration, with the relatively rapid restoration of contact with the environment which occurs when this has been temporarily interrupted. Secondly, he shows that there is in the different tissues of the body a very rich and dense nervous plexus of a sympathetic efferent nature. This brings every element of the body into connexion with the sympathetic nervous system and must be of fundamental importance for the maintenance of metabolism. It also maintains harmony between the body tissues themselves. Thirdly, he discusses the interstitial cells of the sympathetic system, which he regards as primitive types of cells whose morphology may be traced from invertebrate nervous systems. Finally, in a fourth lecture, which was given at the Anatomical Congress at Königsberg in 1937, he discusses the neurone theory and concludes that it is untenable in its original form. Physiologically it is sound and useful, but anatomically the neurone is not so isolated as at first supposed, though much more accurate knowledge about the synapse is necessary.

If this book is somewhat technical it is an important contribution to that background of scientific knowledge from which the practical art of medicine is derived.

Notes on Books

The new edition of *Legal Medicine and Toxicology*, by Drs. THOMAS A. GONZALES, MORGAN VANCE, and MILTON HELPERN (D. Appleton-Century, 50s. contains the condensed knowledge of three experts who have been engaged for years in the daily investigation of violent, sudden, and suspicious deaths in New York City. It deals only briefly with jurisprudence, as the authors advise a physician faced with a case involving a fine point of law to go to a legal adviser. It is a very comprehensive and practical work on forensic pathology and the technique of medico-legal investigation. It is fully up to date, and considers adequately all the recent advances which have been made as a result of the great increase in traffic and aviation accidents and the threat of chemical warfare. The routine work of medical examiners and coroners' physicians is discussed in detail. The separation of toxicology into a section of its own is sound practice in view of the magnitude of the subject, and has been followed in at least one British work. The authors, writing from the point of view of the physician and the pathologist rather than from that of the chemist, have described the method of administration, the clinical symptoms, the pathological lesions, the treatment, and the methods of preserving material for examination. Their system of classification arranges the different poisons in the sequence in which they would be catalogued in practice by a pathologist investigating a case of death from their effects. The tests are described in sufficient detail to give the physician a clear idea of how they are actually done, but it is not within the scope of the book to go into precise details of chemical analysis. The new edition will be welcomed by all the many persons, both officials and private practitioners, who are now concerned with the practice of forensic medicine. The book's American origin detracts hardly at all from its value in this country. The illustrations, somewhat horrific to an English eye, are excellent, but the weight of the volume is formidable —just under five pounds.

The Stammerer Unmasked: A Manual of Psychology and Treatment, by R. MACDONALD LADELL, is published at 2s. 6d. by Sir Isaac Pitman and Sons, Ltd. Dr. Ladell has attempted to depict the stammerer in such a way that he may understand himself and so at least help towards his cure. That he has succeeded in depicting the insecurity and tension which underlie the symptoms of stammer and which must be removed before the symptom is cured most psychotherapists will agree, but how far the reading of this book will permit the sufferer to achieve his own cure is much more subject to doubt. As the author himself says, a mere intellectual appreciation of the situation is not enough, and the chief difficulty in the cure of any psychoneurosis—and, of course, stammer is only one symptom of psychoneurosis—is to make the patient get his own failures into focus and form a proportionate judgment of his own personality. Without this cure will not ensue, and often the assistance of a trained director is required. Nevertheless this readable little handbook may lead stammerers to seek help where help may be given and so achieve the author's purpose.

A new and cheaper edition (5s.) has been published by Chapman and Hall of Dr. HUBERT T. S. BRITTON'S *Chemistry, Life and Civilisation*, being a popular account of modern advances in chemistry, with many well-prepared illustrations. The author is professor of chemistry at the University College of the South-West of England, Exeter, and the first edition appeared nine years ago. A supplement is now included containing further brief notes on vitamins, new drugs, synthetic rubber, and artificial wool.

Preparations and Appliances

CROOKES'S DARK-ADAPTATION TESTER

The Crookes Laboratories (Park Royal, N.W.10) have devised a portable and easily manipulated apparatus for the testing of dark adaptation. The instrument has been designed in the light of the experience gained in recent years, and it is believed that most of the important sources of error have been eliminated. It is sold at the reasonable price of five guineas.

Increasing attention is being paid to night blindness because black-out conditions serve as a drastic test of the ability to see in the dark; moreover, war restrictions upon diet increase the chances of deficient vitamin intake. Hence this convenient instrument is of particular interest at the present time.

PROTAMINE INSULIN IN SOLUTION

Wellcome brand delay insulin (Burroughs Wellcome and Co.) is a preparation of protamine insulin in solution. In this form it retains its full unit value for eighteen months. When required for use a solution of sodium phosphate, supplied in separate phials, is added, and this transforms the solution into a suspension. This suspension remains suitable for use for about a week. The preparation is issued at strengths of 40 units per c.cm. and 80 units per c.cm. It contains 0.3% *o*-cresol as a preservative.

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IMMUNIZATION AGAINST INFLUENZA VIRUS A

When Shakespeare in a pre-bacteriological era spoke of the "base contagious clouds" that smother up the sun, he was doubtless thinking of the infectious colds, catarrhs, and influenzas that flourish in the fogs of winter. With more precise knowledge we now know the cause of certain of these winter rhumes, but our methods of preventing and curing these diseases are as yet but little more successful than they were at the end of the sixteenth century. In part our failure is due to the fact that very similar symptoms may be caused by entirely different agents. When Wilson Smith, Andrewes, and Laidlaw[1] isolated from patients with influenza a virus pathogenic for ferrets and mice, and their work was subsequently confirmed all over the world, it seemed that the problem of influenza was on the high road to solution. Since then, however, a number of epidemics, clinically resembling influenza, have entirely failed to yield any virus pathogenic either for mice or for ferrets. In these circumstances American and British workers[2] have agreed to call the virus isolated by Wilson Smith, Andrewes, and Laidlaw "influenza virus A"; other viruses subsequently isolated from clinical cases of influenza would then be called B, C, and so on. One such possible influenza virus has already been isolated by McIntosh and Selbie,[3] and others may be forthcoming.

Despite the disappointment that is naturally felt that influenza virus A is not the only aetiological agent of clinical influenza, much important work has already been carried out in efforts to obtain satisfactory vaccines against this virus. An interesting development in this connexion is that described by Horsfall and Lennette.[4] A formolized vaccine prepared from the lungs and spleens of ferrets suffering from concurrent infections with the viruses of influenza A and canine distemper was found to stimulate the production of high-titre immune bodies against influenza virus A and resulted in the development of solid immunity against antigenically different strains of this virus injected intranasally in animals. Preliminary tests indicate that the complex vaccine thus obtained from ferrets is effective in stimulating the production of neutralizing antibodies against influenza virus A in man. In a further study of this curious phenomenon Horsfall and Lennette[5] have found that the viruses of influenza A and dog distemper are in no way antigenically related, while ferrets infected with influenza virus A alone rapidly produce considerable quantities of neutralizing antibodies and after the sixth day no longer harbour demonstrable influenza virus in their lungs. Ferrets infected simultaneously with living influenza A and distemper viruses, on the other hand, produce only small quantities of neutralizing antibody, but influenza virus A persists in undiminished concentration in their lungs throughout the course of the infection. This fact, however, does not explain the high antigenicity of formolized tissues from ferrets inoculated with both influenza A and distemper viruses, and additional experiments are obviously required to explain the phenomenon.

Certain curious results have also been obtained by Eaton and Beck,[6] who found that when mice are inoculated intranasally with mouse-adapted strains of influenza virus A they develop an immunity demonstrable within fourteen days only when rather severe lung lesions have been produced. An inapparent infection with a mouse-passage strain does not result in immunity. Intranasal inoculation with either tissue-culture or ferret-passage strains of influenza virus A, however, produced immunity to the mouse-passage strain without causing visible lung lesions as a result of the immunizing procedure. With mouse-passage strains as much as one-tenth to one-hundredth of the minimal lethal dose was required to set up immunity, while with the ferret-passage virus strain one hundred-thousandth of the M.L.D. was enough to cause immunity in mice. Thus, despite the fact that per unit of infected tissue mouse-passage strains are much more virulent for mice than ferret-passage or tissue-culture strains, the mouse-passage strains possess but little more immunizing power by the intranasal route than the ferret-passage or tissue-culture strains. Incidentally, Eaton[7] has shown that when by intraperitoneal inoculation an immunity of low degree is produced with influenza virus A killed by formol the minimal immunizing dose of formolized virus is about thirty-two times that of active virus. In connexion with intranasal immunization against influenza virus A it seems that it may be possible to increase the production by the nasal mucosa of substances capable of inactivating influenza virus A. The presence of an inactivating substance in the nasal mucosa has been demonstrated by Burnet, Lush, and Jackson,[8] and by Francis,[9] but its amount varies widely in different individuals; this variation is probably of considerable importance in relation to individual susceptibility to influenza virus A.

Since influenza A may well play an important part in the outcome of the war, it would seem of the greatest importance to undertake as soon as possible adequate and carefully controlled experiments on the immunizing value of different vaccines. One such experiment has already been made in the past few months in Puerto Rico with tissue-culture vaccine in an attempt to control the epidemic that has raged throughout the Caribbean region. The results obtained in immunization in this outbreak must be awaited with interest.

[1] *Lancet*, 1933, **2**, 66.
[2] Ibid., 1940, **2**, 413.
[3] *Brit. J. exp. Path.*, 1937, **18**, 334.
[4] *Science*, 1940, **91**, 492.
[5] *J. exp. Med.*, 1940, **72**, 247.
[6] *J. Immunol.*, 1940, **39**, 57.
[7] Ibid., 43.
[8] *Brit. J. exp. Path.*, 1939, **20**, 377.
[9] *Science*, 1940, **91**, 198.

TREATMENT OF PNEUMONIA

The administration of sulphapyridine to cases of pneumonia has now been almost a reflex action in this country for some time past, and, so far as we are aware, little thought has been given to the alternative possibility of serum treatment. The position in the United States is different, because an immense effort to improve and facilitate serum treatment had reached its peak just when the new drug was introduced; serum was available for several of the higher types, and the scale and significance of the results achieved had reached a point which compelled admiration as well as conviction. The advent of a mere drug, easily administered, which threatened to relegate these prodigious labours to the scrap-heap was naturally met with mixed feelings, and indeed its first reception was not only critical but even sceptical—a fact for which the rudimentary character of early clinical observations afforded some excuse. A solemn warning was issued by some of the greatest authorities on pneumonia in the U.S.A. against over-enthusiasm about the drug, against relying on it until its effects had been adequately studied, and, finally, against the abandonment of the well-tried method of serum treatment. At that time we suggested that the ultimate conclusions reached in the United States on this subject would be of great interest, and the time has now come when they can be stated.

It goes without saying that chemotherapy in pneumonia, properly conducted, has proved an outstanding triumph wherever it has been tried; papers far too numerous to quote attest its success in many different countries. The early and prudent scepticism in the United States gave place within a few months to approval, which became more and more securely based on extensive and detailed clinical studies. Sulphapyridine is now doubtless used as freely on the other side of the Atlantic as it is here, and only in very restricted circumstances has it caused disappointment. It is indeed exceptional to find approval as qualified as in the conclusions of L. D. Thompson, J. C. Edwards, and C. L. Hoagland,[1] who compare the results obtained in 126 cases with type-specific rabbit serum, and those achieved in 142 cases with sulphapyridine. For various reasons the two entire series are not strictly comparable, but comparison of certain groups within them suggests that serum treatment is preferable in infection with pneumococci of Types VII and VIII, and in cases treated early; among these latter there were no deaths among the serum-treated and two in the sulphapyridine group. Perhaps more significant, because based on much larger experience, is the observation that 81% of serum-treated cases had a prompt crisis, but in only 57% of the drug-treated cases did the temperature fall to normal within twenty-four hours. It was also noticeable that serum-treated patients rapidly became clinically well after the crisis, whereas sulphapyridine left them "still very sick for several days" in spite of the fall of temperature. Experience at the Boston City Hospital, for some years a centre of intensive pneumonia study, is reviewed by M. Finland, F. C. Lowell, and W. C. Spring, jun.[2]; there were 1,037 cases during the year under review, of which 211 were treated with serum only, 225 with sulphapyridine only, and 129 with both. Here again no simple general comparison of the merits of the two treatments is possible, because their choice depended on different indications. Nevertheless these authors have been able to reach conclusions about these indications which form a useful guide. They recommend serum alone for early cases, owing to the much greater and more dramatic effect which it has at this stage; a corollary to this, emphasized by J. A. V. Davies,[3] is that sulphapyridine treatment begun late is still effective, whereas serum usually is not. Serum alone is also indicated in hepatic and renal disease, severe anaemias, and other disorders of the blood-forming tissues, because in such patients the risk of severe toxic effects from sulphapyridine is greater. Another category is defined consisting of patients calling for combined treatment with both drug and serum; these are, of course, cases in which the prognosis is bad, and opinion is bound to differ on what constitutes this indication, especially at an early stage. These authors recommend combined treatment for all but mild cases in patients aged over 60, for all patients with profuse bacteriaemia, for those with extensive consolidation, and for cases in pregnancy or the puerperium. They also recommend it for infections due to pneumococci of Types II, III, and V, unless these are mild. The only positive indication for treatment with sulphapyridine alone is a history of asthma or evidence of sensitiveness to foreign serum. Very similar conclusions are expressed as clear and emphatic instructions in a handbook[4] now entitled *Chemotherapy and Serum Therapy of Pneumonia*, by F. T. Lord, E. S. Robinson, and R. Heffron. This is the third edition of a book which has appeared with three different titles, each reflecting the position of pneumonia treatment at the time of its publication. It was first called *Lobar Pneumonia and Serum Therapy*, because at that time serum was only available for pneumococci of Types I and II, and only lobar pneumonia, so often due to one of these types, was then considered amenable to treatment. With the definition of the higher types and the advent of serum for treating some of them, which brought bronchopneumonia within the scope of serum treatment, the word "lobar" was omitted. Later developments have demanded an addition to the title, and, as before, the existing state of knowledge is clearly and fairly summarized. The practical instructions given in this book, in which no essential detail in administering specific treatment is omitted, make it an invaluable guide to the practising physician as well as a faithful reflection of present-day pneumonia policy in the United States.

From all this it will be clear that America has by no means abandoned serum treatment, and we may well ask ourselves how far these conclusions are applicable to pneumonia as seen in this country. Possibly we see fewer cases in which serum is really necessary, but so long as such cases occur the difficulties involved in this form of treatment should not stand in the way of its being given.

[1] *Ann. intern. Med.*, 1940, **13**, 1188.
[2] *New Engl. J. Med.*, 1940, **222**, 739.
[3] Ibid., 1939, **221**, 734.
[4] *Chemotherapy and Serum Therapy of Pneumonia.* By Frederick T. Lord, M.D., Elliott S. Robinson, M.D., Ph.D., and Roderick Heffron, M.D. New York: The Commonwealth Fund; London: Oxford University Press. 6s.

BIOCHEMISTRY OF ALLERGY

Idiosyncrasy has been defined as an unusual physiological personal equation, and allergy is a chemical idiosyncrasy. The tendency to allergy is inborn, whereas anaphylaxis is an acquired sensitivity. Recent research has thrown fresh light on the biochemistry of these conditions. All the phenomena of allergy can be reproduced by histamine and some of them by acetylcholine. F. R. Rackemann, in an interesting review of the subject,[1] contrasts the method of action of these two substances, histamine appearing after mechanical or toxic injury to the surface of the cell, acetylcholine from nervous stimuli to the cell. He maintains that in the asthmatic paroxysm the evidence for increased cholinergic activity is slight. Direct injury to the bronchial wall by the allergic reaction from inhalation of the specific dust substance is a more tenable hypothesis, always allowing that other specific substances can act through the blood stream. On the whole, the theory of the release of histamine by injury is more acceptable than the release of acetylcholine by nerve stimulation. The question arises, How does histamine, which is toxic to everyone, become liberated in the tissues of certain people in answer to stimuli which are quite harmless to everyone else? Normally there are two antagonists to histamine—adrenaline and histaminase. The former is often highly effective in checking allergic manifestations, but the clinical use of the latter needs much wider trial before it can be proved to be of value. We would suggest that the chemical basis of allergy is a congenital lack of histaminase, aggravated by an intermittent deficiency in adrenaline, thus leading to a relative rather than an absolute overactivity of acetylcholine. Allergy is often a familial condition, and it is in accord with Archibald Garrod's conception of the inborn errors of metabolism that a deficiency of an intracellular enzyme should lie at its root.

The manifestations of allergy express themselves chiefly (*a*) in the respiratory system by asthma, hayfever, paroxysmal rhinorrhoea, recurrent catarrhs; (*b*) in the skin as urticaria, purpura, and eczema, particularly of the infantile type; (*c*) in the alimentary canal by diarrhoea and vomiting, or spastic colon; and (*d*) by effusion into joints. There are many other conditions which with more or less show of reason might be added to this list. Certainly some cases of migraine seem to be of this order. It will be noted that several of these manifestations could be interpreted as a violent attempt to expel the invader, at all events from the vital organs. Clearly many of the manifestations of allergy and of anaphylaxis are closely similar, but it has been felt that there are difficulties inherent in the theory that the anaphylactic contraction of smooth muscle is wholly attributable to the liberation of histamine. C. H. Kellaway and E. B. Trethewic,[2] applying to this question the results of previous investigations by themselves and others on the action of various snake venoms, are of opinion that they have found a missing factor which removes those difficulties. These venoms contain enzymes which set free from the tissues a slowly reacting substance (generally described for brevity as S.R.S.) which stimulates contraction in smooth muscle, and Kellaway and Trethewic have set out to find whether a similar mechanism might be involved in the antigen-antibody reaction of smooth muscles in anaphylaxis. Extensive observations under varying conditions were made on the reactions of several organs of the guinea-pig to antigen, histamine, and the S.R.S. formed by venoms, to see if they were identical. Certain dissociations were observed in these responses which led the authors to conclude that the anaphylactic contraction of smooth muscle is only in part due to the liberation of histamine and probably in part also to S.R.S., similar to, though perhaps not identical with, that liberated by snake venom. This S.R.S. is not formed in the antigen-antibody reaction but is liberated from the tissues, where it may be normally held in an inactive form within the lipoprotein structure of the protoplasm of the cell or loosely bound to it. The salient difference, then, between the biochemical production of allergic and anaphylactic reactions would appear to be that the former is due to histamine rather than to acetylcholine, while the latter is due to histamine plus this slowly reacting substance, set free from its combination in the tissue cell by a mechanism resembling that by which snake venom produces its effect.

[1] *New Eng. J. Med.*, 1940, **222**, 674.
[2] *Quart. J. exp. Physiol.*, 1940, **30**, 121.

CEREBROSPINAL FEVER

Overcrowding, whether in air-raid shelters or in various kinds of building, combined with bad ventilation due to "black-out," provides favourable conditions for the spread of meningococcal infection. There is indeed serious danger of a widespread epidemic of cerebrospinal fever in this country during the coming winter. The policy to be adopted by the Army in dealing with this disease is therefore of immediate interest; it is embodied in a memorandum on cerebrospinal fever among troops,[1] issued by the Director-General, Army Medical Services, on October 23, and superseding all previous instructions. This memorandum sets out the main facts in epidemiology, diagnosis, prevention, and treatment, about which there can be no divergence of opinion, but includes also certain recommendations which are a departure from earlier practice. During the last war swabbing was undertaken on an extensive scale, and carriers were isolated and usually given some form of local antiseptic treatment. The whole of this procedure is now abandoned. Neither the whole strength of affected units nor even the immediate contacts of cases of meningitis are to be swabbed, although the latter are to be "noted for purposes of record." If, on the other hand, a man complaining of post-nasal catarrh and investigated for this reason is found to be a carrier, he is to be given 1 gramme of sulphanilamide thrice daily for eight days. It will be interesting to hear whether this treatment proves generally successful; it has usually failed when applied to throat carriers of haemolytic streptococci. The danger of contact with affected persons is nevertheless recognized in the instruction that "districts or towns may be placed out of bounds if the disease is unduly prevalent in them." For the prevention of the disease reliance is placed mainly on general hygienic measures: adequate nutrition, avoidance of over-fatigue, efficient ventilation, and the avoidance of overcrowding. If these conditions can everywhere be fulfilled, no doubt all will be well. Difficulty is likely to be met chiefly in ensuring adequate ventilation at night, and perhaps the most vital pronouncement in the whole of this memorandum is the following:

[1] H.M. Stationery Office. Price 2d.

"It is essential to ensure that there is a sufficiency of some form of efficient screened ventilators in every occupied room." How to reconcile adequate ventilation with perfect black-out is one of the major problems of the moment; in many buildings where ventilation is important no practicable solution to it has been found. If there is any type of screened ventilator, reasonably cheap to install, which serves this purpose well, its use might with advantage be officially encouraged. The instructions given for the treatment of cerebrospinal fever rely entirely on chemotherapy; serum is not considered necessary in addition. Dosage and methods of administration are discussed in detail; the daily dosage recommended for the average case is 8 grammes of either sulphanilamide or sulphapyridine, the latter being considered "slightly more effective." Special instructions are given for fulminating cases and for chronic meningococcal septicaemia without meningitis. There is a short section on laboratory technique, one point in which, although of general interest, is not as widely known as it should be. This is that swabs to be examined for meningococci should be plated at once, before the mucus on the surface has been absorbed; the drying which inevitably occurs even in short transit renders the specimen quite unsuitable. For this purpose the pathologist should go to the patient, as, indeed, it is provided in this memorandum that he shall, in order to confirm the diagnosis and advise on the treatment of cases of cerebrospinal fever. The main controversial question raised in this memorandum concerns the meningococcus carrier. That he should be treated only if discovered accidentally, while others undoubtedly exist for whom no search has been made, is a minor inconsistency. The larger question is whether any practical safeguard is lost by abandoning the systematic search for carriers, especially of Group 1 meningococci. No doubt it is argued that their segregation did not arrest epidemics in the last war, and involved serious administrative difficulties. The present policy may be the right one for existing conditions, but it will hamper any further progress in studying the epidemiology of this disease. This still has some obscure features, and they must remain so if studies of the distribution of meningococci are not to be continued.

DEGENERATIVE LESIONS OF THE SPINAL COLUMN

Study of the degenerative lesions of the spinal column, based to a great extent on the work of Schmorl and his followers, has done much to elucidate the factors in low back pain and the sciatic syndrome, but similar lesions in the cervical spine have not excited so much interest. Degenerative changes in the intervertebral disks due to advancing years, the trauma of wear and tear, or grosser injuries which are the cause of spinal osteo-arthritis, may give rise to pain and other effects in the distribution of the peripheral nerve. Pressure on the nerve roots may be caused by the closer contact between adjacent vertebral bodies which results from thinning of the intervening disk and thus narrowing of the foramina, or the pressure may be exerted by osteophytes formed as a consequence of the intermittent strain on the vertebral ligaments brought about by the greater mobility of the bodies when the bulk of the disk is diminished. Radiographic appearances may be misleading, because, as Garcin and Deparis have pointed out,[1] the nerve symptoms are frequently on the opposite side to the obvious osteophyte. They suggested that the cause of the trouble was osteophytes in course of formation and not yet opaque to *x* rays, but the more probable explanation is that the osteophyte prevents the close apposition of the vertebral bodies in its vicinity but tends to cause compression through greater narrowing on the opposite side. The part played by the intervertebral disks has led to the term "discogenetic disease." Gunther and Kerr[2] were among the first to investigate the nervous symptoms which might thus arise, and an extensive literature has grown up round the subject. Horwitz[3] has made a special study of the cervical spine from this point of view and has dissected it out in fifty cadavers, finding degenerative changes in the disks in thirty-eight. He has compared the anatomical with the radiographic appearances with a wealth of detail, and draws attention to the observation of many others in the same field. Such symptoms as discomfort, muscular weakness, and atrophy with segmental distribution may arise, and the comparison with low backache and sciatica from similar causes throws further light on the possible effects. In the upper limb, cervical rib, the scalenus anticus syndrome, and fibrositis, bursitis, and arthritis of the shoulder may give rise to similar symptoms and call for careful differential diagnosis. The nervous manifestations of "vertebral rheumatism"—the term covering ankylosing spondylitis as well as osteo-arthritis of the spine—have been discussed fully by Buckley,[4] with special reference to the work of French authorities.

[1] *Rev. méd. franç.*, 1934, **15**, 387.

ACUTE RHEUMATISM IN AUSTRALIA

In 1937 the Central Board of Health of South Australia, with the aid of a grant from the National Health and Medical Research Council of Australia, started an inquiry into the incidence and epidemiological aspects of "juvenile rheumatism," the term including acute and subacute rheumatic fever, rheumatic carditis, and Sydenham's chorea, whether occurring in children or adults. According to the report now published of the research officer, Dr. C. B. Sangster,[5] the highest incidence of first attacks was in the age group 5 to 12, although up to the age of 16 initial attacks were relatively common. That rheumatic infection is a serious public health problem is shown by the fact that no less than 40% of the younger children were discharged from hospital with a murmur significant of valvular disease; the figure fell to 12% for children over the age of 12. Such cardiac damage was found to follow acute rheumatism more often than it did chorea, and was particularly common in the few patients manifesting both conditions. Apparently this combination points to a more virulent or generalized infection. It is also significant that every patient who exhibited nodules was judged to have been discharged from hospital with cardiac damage. In a third of the cases of acute rheumatism there had been some preceding upper respiratory infection, generally acute tonsillitis. An examination of the distribution of the disease in Adelaide revealed a moderately close association between incidence and the degree of poverty and the density of the population. Dr. Sangster concludes that the latter is the more important factor of the two, but the statistical evidence is not sufficient to justify this conclusion. The most that can be said is that rheumatic infections in Adelaide, as elsewhere, occur more frequently where there is overcrowding, unhygienic living conditions, and, probably, poor nutrition. On the other hand, a special inquiry into the home conditions of 128 patients lends some support to the observations in this country that the incidence decreases as the lowest level of poverty is reached. Infection was more frequent in families having a small income near the basic wage level than in those in receipt of relief. More conclusive statistical evidence on this point would be well worth pursuing. No satisfactory conclusions can be drawn from the other data collected, for no control group

[2] *Arch. intern. Med.*, 1929, **43**, 212.
[3] Ibid., 1940, **65**, 1178.
[4] *Reports on Chronic Rheumatic Diseases*, 1935, **1**, 128, London.
[5] *Med. J. Austral.*, 1940, **1**, 461.

was studied. There was overcrowding in twenty-three of the 128 homes, and in the same number there were damp walls or floors, but clothing and diet were considered generally to be adequate; in other words, no outstanding environmental factor was found. A more extensive study, based largely on the observations of medical practitioners, showed, however, that the disease was not often found in those parts of the State where dry heat prevails, and was more common where there is a combination of dampness, higher rainfall, and relatively cold temperatures. Similarly, hospital records revealed that the incidence reached its maximum in the winter months. Such observations are, of course, open to more than one interpretation. Dampness, rainfall, and low temperatures may clearly play only an indirect part by leading to conditions of life which favour the transference of infection, and may not have the more direct effect popularly associated with them.

FELTY'S SYNDROME

Since Felty[1] in 1924 described a group of cases of rheumatoid arthritis in which there was enlargement of the spleen associated with slight secondary anaemia and, in some instances, enlargement of the lymph glands the syndrome has attracted attention and many other cases have been reported. Felty thought that two explanations were possible: either all the symptoms were due to a general infective process, or there were two distinct clinical entities in the same patient. He came to the conclusion that the syndrome was a distinct clinical entity, but among other observers opinion is still divided. Curtis and Pollard[2] have now made an exhaustive study of four cases and compared them with controls. In three of these cases biopsies of skin and muscle revealed: (1) atrophy of the epithelium, (2) fibrosis of the corium, (3) increase in the interstitial nuclei of the muscle fibres, and (4) small perivascular infiltrations throughout the corium and muscle. Atrophic changes in the skin and muscles as well as in the bones and joints have been described by many other workers, and Brogsitter[3] regarded them as of diagnostic importance. The blood picture in the cases studied by Curtis and Pollard showed slight secondary anaemia with a moderate degree of leucopenia, a condition which has frequently been described and is generally regarded as indicative of a chronic infection. Collins[4] has recorded two cases in which the leucopenia was associated with a marked deficiency of polymorphonuclear leucocytes; a similar association was found by Curtis and Pollard in one of their cases, but the differential count in the other three was not abnormal. Whether the leucopenia is related to changes in the bone marrow is not clear, but Collins concludes that neutrophil leucopenia is due to excessive destruction of polymorphs rather than to failure of the bone marrow, in which increased cellularity has been noted in some cases and fatty changes in others. The number of cases in which the condition of the bone marrow has been studied is, however, small. In view of the atrophic bone changes in rheumatoid arthritis further investigation by sternal puncture would be of interest. It may be noted that some physicians regard the prognosis in Felty's syndrome to be unfavourable, but this is not supported by the cases under discussion. A reasonable conclusion is that where the spleen and blood changes dominate the picture a more severe general infection is present and the prognosis is unfavourable, but where these symptoms are slight in comparison with the arthritis the prognosis is not to be influenced by them. It would appear that the syndrome is simply the effect of the unknown aetiological agent of rheumatoid arthritis, thus supporting the view now generally held that rheumatoid arthritis is a generalized disease of which the arthritis is only one manifestation.

[1] *Johns Hopk. Hosp. Bull.*, 1924, **35**, 16.
[2] *Ann. intern. Med.*, 1940, **13**, 2265.
[3] *Proc. IIIe Congrès International du Rhumatisme*, Paris, 1932.
[4] *Reports on Chronic Rheumatic Diseases*, 1937, **3**, 49, London.

TRANSPLEURAL ASPIRATION OF TUBERCULOUS CAVITIES

The first attempts to treat tuberculous cavities by direct transpleural aspiration were described by Monaldi and his co-workers, Bottari and Babolini, from the Forlanini Institute at a meeting in 1938 of the National Fascist Federation for the Fight against Tuberculosis. A catheter is inserted by means of a trocar through the chest wall into the cavity, the situation of which is first determined radiologically, and very low pressure suction is applied intermittently. The complications that might be expected —haemorrhage from the cavity, pulmonary embolism, and fistulation of the chest wall—do not occur; the cavity diminishes in size and is eventually obliterated. According to Monaldi[1 2 3] the technique is based theoretically on biological changes in the cavity wall, and on re-expansion of atelectatic tissue surrounding the cavity. Its success depends on an understanding of the various types of cavity; it is essential, in order to avoid a tuberculous empyema, that the pleural cavity in the area in which the trocar is inserted should have been completely obliterated by adhesions. Dolley states that Monaldi and his co-workers have now used the method in nearly two hundred patients.[3] Reports of its use have appeared recently from France, Germany, Switzerland, and the U.S.A. Heinrich Grasse,[5] who also finds that the treatment is easy to apply and that there are no complications provided reasonable care is exercised, reports satisfactory immediate results—marked diminution in the size of cavities. A technique devised by Hermann Weber[6] enables the patient himself while ambulant to carry out the aspiration with a syringe. It has been tried in fifty-three patients already, and Weber finds that the cavities diminish to half their size in two to three weeks and "heal" in six to eight weeks. He considers that the more rapid results achieved with his technique than with Monaldi's are due to the greater aspirating force used. The number of times the aspiration is carried out and the rate of closure of the cavity depend to a large extent on the patency of the draining bronchus. Albert Schuberth[7] emphasizes that good results are obtained not only with "elastic" cavities but also with those presumed to have thick fibrous walls (Monaldi showed that there are "gaps" in such fibrotic capsules), and believes the result to depend more on the condition of the draining bronchus than on that of the cavity walls. Papers relating to the technique and results of the operation have recently also been published by Jeanneret and Joyet,[8] Chadourne and Baudouin,[9] Jullien and Louise le Porz,[10] Dumarest,[11] Burnand and Francken,[12] Arnould,[13] and Davidson.[14] Kupka,[4] who attended Monaldi's clinic for some months, has carried out transpleural aspiration in fifteen patients within the past six months at the Olive View Sanatorium, U.S.A. In four the cavities are apparently closed, while in ten the sputum became free from tubercle bacilli within twenty-four hours. Dolley,[4] who points out that "no

[1] *Ann. Ist. "Carlo Forlanini,"* 1938, **16**, 665.
[2] Ibid., 1939, **17**, 201.
[3] *Z. Tuberk.*, 1939, **82**, 273.
[4] *Amer. Rev. Tuberc.*, 1940, **41**, 661.
[5] *Z. Tuberk.*, 1939, **84**, 1.
[6] Ibid., 19.
[7] Ibid., 1940, **84**, 185.
[8] *Rev. Tuberc.*, 1939, **5**, 844.
[9] Ibid., 1939-40, **5**, 1122.
[10] Ibid., 1225.
[11] Ibid., 1232.
[12] Ibid., 1134.
[13] *J. méd. de Leysin*, Sept.-Oct., 1939.
[14] *Quart. Bull. Sea View Hosp.*, 1940, **5**, 385.

dependable or accurate report" has as yet become available from Monaldi's clinic and that the procedure is still in its experimental stage, concludes that if direct drainage causes a cavity to disappear when there is very inadequate bronchial drainage then the method will have considerable value.

A VACCINE FOR MEASLES

Although measles immune serum, placental globulins, and even pooled adult sera have been used to produce a passive immunity against measles in children exposed to an immediate risk of infection, the foreign serum is so rapidly excreted from the tissues that the immunity conferred has disappeared in from two to three weeks. A difficulty in producing an efficient virus vaccine has been the absence of a convenient laboratory animal susceptible to measles, for rhesus monkeys cannot be used in large numbers, nor is their reaction to measles virus invariably well marked. Two years ago Plotz,[1] working at the Pasteur Institute in Paris, claimed to have grown the virus of measles in flasks containing serum Tyrode and chick embryo tissues, and to have prepared a vaccine suitable for use in children. Later Rake and his colleagues[2] grew the virus in the developing chick embryo. The virus appeared to become attenuated on passage through eggs, a change which often occurs when the virus is passaged in rhesus monkeys. Stokes and Rake[3] now state that as the egg-passage measles virus produces either no reaction or only a mild form of measles when inoculated subcutaneously or instilled intranasally in children they have tested the value of this measles vaccine in two small groups of children in New Jersey and Philadelphia. In America the advice of Jurgen is followed more closely than in this country, and people are willing to try any medicine once. In this instance none of the vaccinated children developed measles. This group and the unvaccinated controls were then given injections of measles virus from patients with measles. The unvaccinated children came down with measles, but those vaccinated did not. The numbers of children in the two groups were, it is stated, not sufficiently large to allow the results to be of statistical value, but if similar findings are obtained on a larger scale a notable triumph in preventive medicine will have been achieved.

AN INTERNATIONAL MENTAL HOSPITAL IN SYRIA

The annual report of the Lebanon Hospital for Mental Diseases (Asfuriyeh, near Beirut) appears at a moment when events in Syria are nearing a crisis, and when communication between the hospital and Great Britain is limited to telegrams. Much sympathy will be felt with the medical director, Dr. Stewart Miller, and his British staff, who are carrying on their responsible work in such circumstances. Dr. Miller's annual report and statistics show that the admissions for 1939 numbered 341. With 436 patients in residence at the close of 1938, the total of cases treated in 1939 stands higher than ever, at 777. The discharges were 381—90 higher than in the previous year, owing to removal by the municipality of Beirut, for financial reasons, of 129 slighter cases to a monastery near by. Of the 381, 67 were discharged recovered and 70 improved. The deaths were 35, or 4.5% of the total cases treated. Dr. Miller gives three tentative general conclusions regarding the treatment carried on: (*a*) shock treatment, including insulin therapy and cardiazol therapy; (*b*) malarial therapy; (*c*) non-specific fever therapy. "(1) In schizophrenic reaction states that are in any way chronic none of the therapies mentioned procure any complete recovery or even any lasting mental benefit. Insulin therapy certainly benefits the patient physically. (2) In schizophrenic reaction states that are still acute non-specific fever therapy yields as satisfactory results as any other, and with the advantage that it is much less dangerous and much less costly. (3) In manic-depressive states non-specific fever therapy will effectively shorten the duration of the attack as satisfactorily as any of the other therapies, and this with less risk to the patient and at less cost." At the annual meeting of the hospital in London Dr. Isabel Wilson, commenting on this report, pointed out that mental disorder was an intangible and elusive thing, and its treatment not a science but an art. The important thing was that at this hospital there was a thoroughly progressive medical staff, evidently pursuing this difficult art by testing every promising remedy and selecting those which they personally found most helpful under local conditions. The effects of the war were quickly felt. Travelling of the many private patients from Egypt, Palestine, and other neighbouring lands had been practically cut off; more military cases had been received, also more Government cases, in spite of the policy of the municipality of Beirut, referred to above. In the last war this international hospital, then consisting of 100 beds, stood in the Turkish Empire, and its medical director, the late Dr. Henry Watson Smith, was virtually a prisoner. Even while war and famine raged in the countryside the Turks respected the hospital as *wakf* (a religious foundation), protected it, and provided it with food. When freed by the British, Dr. Watson Smith gave invaluable service to General Allenby's troops during an influenza epidemic. Should the present war move eastwards the hospital's service may prove to be even more important, as it is now a large place with magnificent buildings, ample water supplies, electricity, and every amenity.

[1] *Bull. Acad. Méd.*, Paris, 1938, **119**, 598.
[2] *Nature*, 1939, **144**, 672.
[3] *Science*, 1940, **92**, Supplement, p. 10.

MEDICAL PREPAREDNESS IN THE U.S.A.

The *Journal of the American Medical Association* records the issue of an executive order which sets up, with the approval of the President of the United States, under the Council of National Defence, a subordinate body to be known as the Medical and Health Committee. The chairman of this organization is Dr. Irvin Abell, who is also chairman of the A.M.A. Committee on Medical Preparedness. The other members are the Surgeon-Generals of the Army, the Navy, and the Public Health Services, and the chairman of the Division of Medical Sciences of the National Research Council. It will be the responsibility of the committee to advise the Council of National Defence regarding the health and medical aspect of national defence and to co-ordinate health and medical activities in this connexion. The committee is given wide powers for the carrying out of its functions. "This executive order," says our contemporary, "brings to a favourable conclusion a cause for which officials of the Association, representing the Board of Trustees and the House of Delegates, have laboured persistently since the annual session in June. The work of the American Medical Association in the development of personnel for the military services, for industrial medicine, and for maintaining the health of the people can be carried forward with far greater efficiency through the establishment of some relationship directly with the Government. . . . The work of the National Research Council in the investigation of procedures to be carried out for military purposes, in the development of information to be circulated to the medical profession, and in the standardization of military medical procedures will also be greatly facilitated by this co-ordinating committee."

A METHOD OF BLANKETING A.R.P. OR OTHER STRETCHERS

BY

E. B. GROGONO, M.B.

This method was evolved progressively by Wanstead and Woodford S.P. leaders and men after discovering in practice exercises the various interesting disadvantages, using two blankets only, in all officially described methods.

Preparing the Stretcher

1. Blanket A is laid lengthwise across the stretcher with one *side* close to the head *end* of the stretcher. (Fig. 1.)

2. Blanket B is folded in three lengthwise and laid over A, covering also the part of the stretcher, about 1 ft. long, at the foot end and left uncovered by A and hanging a few inches over the foot (see Note I). (Fig. 2.)

3. The folds of B are laid open for about 18 in. at the foot end. (Fig. 2.)

4. The free ends of A are rolled or close folded to lie along the sides of the stretcher, which can now be carried about in complete readiness for a patient.

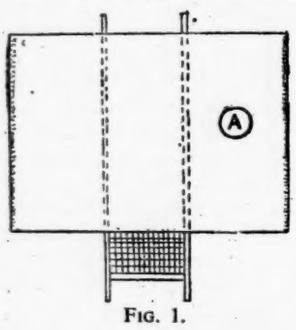


FIG. 1.

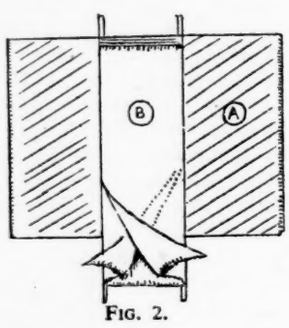


FIG. 2.

Wrapping a Patient

1. The foot of blanket B is brought up over the feet, with a small fold between the feet (see Note II).

2. The two open folds of B are then tucked closely over and round the feet and ankles. (Fig. 3.)

3. The rolled edges of blanket A are eased out from under the patient if necessary (see Note III) and tucked down round the shoulders and well over down both sides. (Fig. 4.)

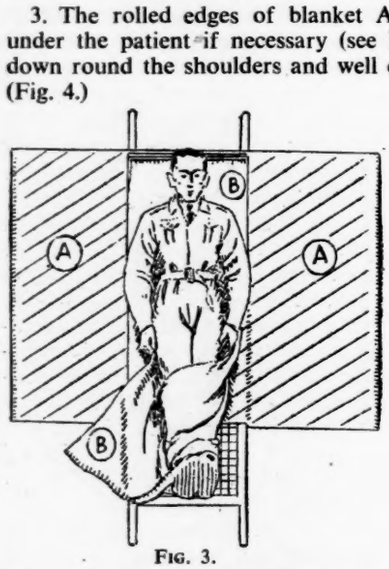


FIG. 3.

FIG. 4.

Preparing Blankets for Stowing in Readiness on Car or Ambulance or as a Pack

1. Proceed as under 1 and 2 for preparing a stretcher.

2. Fold in the two ends of blanket A, taking the folds right into the sides of B and folding back again the ends of A.

3. Fold both ends of the blankets (taken together) in to meet at the middle (see Note IV).

4. Fold again into two or roll into a cylindrical pack.

[*Note* I (a minor refinement for short patients only).—Blanket B may be drawn up 6 in. over the head end and folded over, giving seven layers instead of four under the head, as a pillow.

Note II.—This fold to go between the feet comes up almost automatically when the foot of blanket is tucked over the feet, and makes for both neatness and comfort.

Note III.—It is found, even with broad patients, that the rolled edges can be eased out from under the shoulders without difficulty or discomfort.

Note IV.—The foot and head ends of the folded blankets are respectively thin and thick, and can be distinguished instantly. For example, an ambulance attendant can lay a stretcher in readiness in the dark.

Note V.—The method is adaptable—for example, a long thigh splint can be allowed to protrude with a trifling adjustment of the blanket folding round the feet.]

Commentary

The following advantages are claimed:

The maximum of warmth, support, and absence of draught are obtained from two blankets, even with a broad 6 ft. 2 in. patient. (Compare with Handbook No. 10 method.)

The removal of patient from stretcher by a simple blanket lift, using blanket B, is safe and convenient. (Compare with the otherwise excellent interlocking blankets method.)

The blankets are thick, and close round the patient so as to render fastening by ropes or triangular bandages, for lowering, comfortable and safe.

Nova et Vetera

HISTORY OF DENTISTRY

The Story of Dentistry. From the Dawn of Civilization to the Present. By M. D. K. Bremner, D.D.S., F.A.C.D. (Pp. 212. 20s. net.) London: Henry Kimpton. 1940.

Dr. Bremner, a Doctor of Dentistry practising in Chicago, writes the story of dentistry. He began it to answer the questions asked him by patients as to: "Who invented the dental drill?" How were teeth pulled out before the advent of anaesthesia?" "Was there crown and bridge work in ancient Egypt?" "What force in pounds is used by the jaws in biting a loin chop or a tough beefsteak?" "Is caries more common in some parts of the world and in some races than in others?" "When did porcelain replace dentures carved out of bone or ivory?" "What is amalgam and when did it replace gold as a filling for hollow teeth?" Some of the answers he knew, others had to be looked for. What began as a catechism thus grew into a history written more for the intelligent layman than for members of the dental profession.

The story is well told. It begins with prehistoric times and ends with the recognition of women as capable dentists. The making of artificial dental appliances reached a high standard in ancient Egypt and afterwards among the Etruscans in Italy. It came to an end when the early fathers taught that the care of the immortal soul was vastly more important than the decoration of the vile body. For a thousand years dentistry ceased to exist, though the pulling of teeth went on. The new life began in the middle of the eighteenth century when Pierre Fauchard (1678–1761) in Paris and John Hunter in London began to study the practical and scientific aspects of the teeth. Advances were made in the United States, more especially on the mechanical and prosthetic sides. England lagged behind; but Sir Richard Owen, the Tomes father and son, and many others carried out scientific work of the highest order. The combined effort in England and America has made a profession out of what might have remained a mere trade.

THE JOURNAL'S CENTENARY

MESSAGE OF CONGRATULATION

Dr. J. O. Mercer, Editor, "New Zealand Medical Journal":

Please accept the sincere congratulations of the New Zealand Branch of the British Medical Association on the publication of your centenary number. In this the most remote of your affiliated Branches the *British Medical Journal* has ever been a strong and important link between us and the parent body. We welcome this opportunity of acknowledging our debt of gratitude to those who maintain its standard of scientific excellence and to those who keep us so well informed on professional and political matters. In these great and difficult times we follow the work of the medical profession in the United Kingdom with increased interest, and the articles on the special problems of the war which have appeared over the past year are of the greatest value to us in New Zealand. We have the greatest admiration for the manner in which the *Journal* has maintained its high standard in the face of difficulties the magnitude of which we can only dimly comprehend. We wish you continued success in future years.

Reports of Societies

INJURIES TO THE EAR

At a meeting of the Section of Otology of the Royal Society of Medicine on November 1 Mr. LIONEL COLLEDGE, the President, opened a discussion on "Injuries to the Ear."

Mr. Colledge said that injuries caused by explosions could be grouped roughly into two classes: those in which there was a gross tympanic injury which could be seen with a speculum, even if it did not cause blood to escape from the meatus, and those in which there was concussion of the labyrinth without signs of injury to the tympanum. The two might be combined, but most authors took the view, which was in accord with his own experience, that rupture of the tympanic membrane seemed to exert some protective influence upon the labyrinth beyond. The actual effects upon the tympanic membrane, from small haemorrhages or tears to almost total destruction, were well known, but it was not so commonly recognized that the membrane might be blown out, the edges of the perforation being everted instead of inverted into the tympanum. Concussion of the labyrinth without necessarily rupture of the membrane could be produced either by transmission effects of a blow on the head through the bones of the skull, or through sudden increase of atmospheric pressure from an explosion.

Direct wounds of the temporal bone in warfare must be fairly common, but not a great many were recorded, probably because they were often immediately fatal. Most of the wounds caused by firearms which had been studied were in cases of suicide. Here the projectile was a small bullet fired from a pistol without much power of penetration, and such cases were not of great interest. A French observer had mentioned forty-two cases of gunshot wounds of the ear in the last war, in which the projectile was in the tympanum in fourteen cases, in the mastoid in twenty-one, and in the petrous in seven. For the extraction of such foreign bodies a supra-auricular route was suggested as long ago as 1888, and a pre-auricular route in 1894. The latter would give very poor access, and the method of approach had nothing to recommend it. If the foreign body could not be extracted through the meatus the proper route was by a retroauricular incision. In most cases the damage to bone was so extensive that the radical operation was necessary, and this should certainly be carried out if the labyrinth was injured or the projectile impacted in the petrous. Haemorrhage from an injured internal carotid artery could be controlled by packing, as from the lateral sinus. The value of ligature of the internal or common carotid in the neck was doubtful. If it was necessary to resort to either, probably ligature of the common carotid was the better.

Although fractures of the skull involving the temporal bone were sometimes limited to the external auditory meatus, to the mastoid process, or even to the walls of the tympanum, by far the most important were those which passed through the petrous portion; the cause was usually a blow or a fall on the head. The fracture of the petrous was always indirect, brought about by radiation from some part of the vault into the anterior, middle, or posterior fossa. Although the petrous appeared to form a solid buttress, it was less strong than it seemed because it contained the cavities in which the organ of hearing was lodged. Longitudinal fracture was the most common, but it was impossible to fit every fracture into a rigid classification. The old observation that fractures of the skull united slowly and only by fibrous union had been proved to apply to fractures of the labyrinth. This defective repair carried with it remote dangers in the region of the middle ear, because the fibrous scar, which was weak or might scarcely exist at all, formed an ineffective barrier to the spread of an infective process. This accounted for the relationship between labyrinthine injury and late meningitis. There was some immediate risk of meningitis in a longitudinal fracture which laid open the tympanum. On the other hand, transverse or other unclassified forms of fractures which occasioned a fracture of the labyrinth without necessarily being accompanied by a rupture of the membrane also induced a permanent liability to meningitis following a chance attack of otitis media, no resistance being offered to the immediate invasion of the labyrinth.

Mr. Colledge added that examination of the ear in head injuries should follow the usual lines, but all syringing or lavage to clean the external auditory canal of blood clot or other debris must be avoided. Escape of cerebrospinal fluid from the ear indicated a rupture of the meninges, but it was not necessarily fatal, nor necessarily associated with rupture of the tympanic membrane. Operation on the ear was seldom indicated, but the opinion which Nager had expressed —that in a case of old head injury, with signs of fractured petrous, shown by deafness, absence of vestibular excitability, and intact tympanic membrane, the earliest suspicion of meningitis called for radical mastoid operation and exposure of the labyrinth—was a good guide in a situation the dangers of which were not generally appreciated.

Ear Injuries in Air Raids

Miss D. JOSEPHINE COLLIER discussed injuries of the ear in the civil population as a result of air-raid bombardment, basing her remarks mainly on experience in Barcelona during the Spanish war. Injuries of the middle ear could be divided into two groups: those produced directly by the penetration of bomb fragments and those due to the expansion of air produced by explosion. In the first group the entry was by the mastoid process or the temporo-mandibular joint with fracture of the bony external meatus. Patients with wounds in this region caused by large pieces of bomb seldom reached hospital alive. There might be signs of associated cerebral injury with unconsciousness for several hours or days, and only when this stage had passed were the symptoms of middle-ear lesion noted—namely, tinnitus, deafness of the middle-ear type, and occasionally nystagmus. Cases treated by an otologist in the first instance were likely to escape infection. A foreign body should be removed only when it was provoking severe reaction such as pain and persistent discharge. Removal should be done by the radical mastoid operation as conservatively as possible because of the liability to intracranial infection.

The majority of ear injuries treated at Barcelona were caused by blast. Dr. Rafael Trueta found that out of 208 consecutive cases of middle-ear damage, 175 had been caused in this way, and only thirty-three by direct violence of bomb fragments. With medium bombs of between 100 and 300 lb. rupture of the tympanic membrane with bleeding from the middle ear was liable to occur in individuals who had been within a radius of 50 ft. Partitions and walls of buildings

protected the individual against blast effects. In Barcelona only 0.5% of those injured within buildings, including those actually in the room where the bomb exploded, suffered injury to the middle ear, as compared with 40% of those injured in the street by the medium bombs mentioned above. Rupture of the tympanic membrane in these patients was accompanied by a sharp pain, bleeding from the ear, and high-pitched tinnitus which soon changed to a low note; the tinnitus was always the last symptom to disappear. If the otologist was able to treat these injuries from the outset the course was almost always favourable and infection did not occur. Unfortunately, in the majority of cases the tympanic lesion had to take second place to more serious injuries of greater importance to life which demanded immediate attention.

Treatment of middle-ear lesions was simple. If the patient was seen during the short period while bleeding from the ear was in progress it was best to assist the drainage by placing the patient with the ear on the appropriate side. If a clot had already formed in the tympanic wound aspiration with a Siegle speculum was necessary, followed by closure of the external meatus by sterile gauze. The persistent tinnitus was less easily resolved. There might be a psychological factor in addition to the ear damage. The presence of nasal obstruction contributed to the incidence of tympanic lesions. In Barcelona it was also found that tympanic injuries were more frequent in men than in women, perhaps because the latter were more likely to cry out at the approach of a bomb, thereby maintaining the balance of atmospheric pressure on both sides of the membrane. The practice of placing a pipe or pencil between the teeth when the fall of bombs seemed imminent was found to diminish the incidence of tympanic injuries. The ear protector which gave best results in preventing tympanic injury consisted of a small plug with a valve that remained open save when the external pressure was increased. It was perhaps unfortunate that the rubber plugs now being distributed to the civil population as part of the A.R.P. services had not been designed on similar lines.

Civil and Military Injuries Compared

Mr. V. E. NEGUS said that out of 622 civilian air-raid casualties 199 were injuries of the head and neck. Of these the cranio-cerebral cases numbered 129. The ear cases numbered twenty-four, or 3.8% of the total. He had also analysed 1,417 military casualties (chiefly war injuries, but including a few accidents), and among these there were 165 head cases, cases of cranio-cerebral injury numbering eighty-two and of ear injury twenty-nine, or 2% of the total. The majority of the ear injuries—sixteen out of the twenty-four in the civilian cases, and twenty-two out of the twenty-nine in the military cases—were traumatic rupture of the tympanic membrane. Practically all the ear cases were associated with other injuries, and the majority were due to blast. No patient complained to any extent of tinnitus or of vertigo, and a routine examination was required to discover some of the ruptures. This examination was made in view of the serious effects which might follow infection of the ear. In the treatment of these cases the ear should be left alone. For purifying the external meatus he preferred a mercury preparation which left the ear dry, moisture being likely to precipitate infection. Any cerumen should be carefully removed, but the deeper parts of the meatus should be left strictly alone. He protested against the practice of pushing wicks of gauze or other material into the ear. Spread to the mastoid seldom occurred; if it did, any operation on the mastoid process should be delayed certainly for two weeks. At one time the case for immediate operation in wounds of the mastoid process might have been arguable, but the introduction of chemotherapy pointed to the wisdom of delayed operation. Any fragments of loose bone or metal should be removed at the time, but nothing in the way of extensive operation should be done.

Mr. F. W. WATKYN-THOMAS said that his experience rather supported the view that labyrinthine lesions were progressive. He had seen two cases of civil injury with labyrinthine concussion in which some progressive labyrinthine deafness seemed to have occurred. One was in a contemporary of his in his public school who received a "knock-out" blow in boxing, and from that date noticed a slight deafness in his left ear which made slow but gradual progress for more than thirty years. Mr. W. M. MOLLISON mentioned a case of a man injured in the ear in an explosion at a munitions factory. This was an example of positive pressure, because on opening the antrum the incus was discovered stained with gunpowder. Dr. HUGO FREY said that small tympanic ruptures might heal within a few weeks, but where the rupture was larger many months might pass without any visible tendency for the perforation to close. He believed that the reason for the delay was that the epithelium from the outer surface of the membrane went over the border of the perforation and thus prevented further union. He had employed a slightly irritant treatment with a probe tipped with cotton-wool dipped in normal saline solution, using it on the border of the membrane, and, if this did not avail, a paracentesis needle, and the perforation afterwards began to heal.

Mr. E. D. D. DAVIS agreed with Mr. Negus that in rupture of the drum the best course was to leave the patient alone. In drainage, when there was blood in the middle ear, the best position was the sitting one; to lay the patient on one side did not give anything like so good a result. Blood in the middle ear in fractures of the skull very rapidly disappeared. Concussion deafness was a difficult subject, and neither in the last war nor in the present bombardment of London was the number of cases of internal-ear deafness large. Distinction must be made between concussion deafness and psychological deafness. The former was accompanied by other cerebral symptoms and signs of severe injury. Mr. C. HAMBLEN THOMAS mentioned grafting operations for the pinna. In one case he had succeeded in using a tubular graft from the inner surface of the arm. Usually a graft from the back of the neck was recommended; but the graft from the arm had proved quite convenient and successful. Mr. R. J. CANN said that in some patients with war injuries of the ear he had noticed great sensitiveness to slight sounds such as footsteps. One out-patient had complained that owing to the irritation he could no longer endure the tinkling of the piano which he had previously enjoyed.

Mr. COLLEDGE, replying to the question of buildings as a protection against blast, said that in the last war it was observed that if soldiers received their injury in a dug-out both ears were likely to suffer, but if in the open only one ear was affected, or one ear more than the other. Diagrams of the rupture of the tympanic membrane shown by Mr. Negus had brought out the point that Shrapnell's membrane was never ruptured; the damage was always to the tense membrane. He agreed with Mr. Watkyn-Williams about progressive deafness. Many patients who had concussion deafness in the last war had had something corresponding to senile deafness develop prematurely.

CHEMOTHERAPY FOR WAR WOUNDS

At the meeting of the Medical Society of London on October 28, with the president, Dr. G. W. GOODHART, in the chair, a discussion took place on "Chemotherapy and War Wounds."

Colonel MAX PAGE said that it was not until 1939 that surgeons took any interest in the use of the sulphonamide group of drugs in the treatment or prevention of infection in wounds. Sulphanilamide and some of the other compounds were used in the treatment of streptococcal infections, but there was no evidence that they were employed against anaerobic infections or in the primary treatment of a wound. Experimental work during the last few years, mainly on mice, had indicated that the members of the sulphonamide group had prophylactic value, varying with the particular drug and the particular organism, and with these suggestions in mind the use of these compounds in the prophylaxis and treatment of war injuries was keenly anticipated. Plans were made for controlled experiments on the question of prophylaxis, which appeared to be the first issue calling for settlement, and it was hoped to obtain groups of comparable cases treated

within a reasonable time surgically in certain of which the drugs would be used and not in others. Owing to the nature of the campaign in France and Flanders, however, the plans went awry, and only sporadic attempts were made so far as the recorded evidence went. In one group of twenty or thirty cases treated under relatively stationary conditions in which excision was systematically carried out, followed by the sulphanilamide pack and primary suture, Major Sampson Handley was convinced that the cases did remarkably well. Given the conditions under which Major Sampson Handley was then working, with the wounds excised within twelve hours of infliction, there was no reason why healing should not be by first intention. The speaker's own impression was that the incidence of secondary infection in the average wound which had been treated with sulphanilamide was lower than might have been expected from the experience of the last war, but he agreed that that was a very vague statement.

Prophylaxis by mouth had not been much practised. In Flanders a certain number of field ambulances handling patients on whom they could not operate gave them sulphanilamide by mouth, and in some instances introduced it into the wound, but the circumstances made scientific recording out of the question. The condition in which the prophylactic use of a sulphonamide was probably good—though he acknowledged that here he spoke rather at random—was a late wound, twenty-four or forty-eight hours or perhaps a week or more after infliction, requiring operation and in which it was anticipated that as a result of operation there might be a flare-up. If in such a case the patient was given a full dose by mouth beforehand intervention could then more safely be made. How far that had been practised at home he did not know, but it appeared to be a sound practice so far as streptococcal infections were concerned. As for gas infection, this was more rare than formerly, but there were causes other than the introduction of the drug which explained the lower incidence—for example, the cleaner condition of the patients.

In the sphere of treatment a few doses of the drug would deal with an acute streptococcal infection on most occasions, but the same was not true of the chronic infection. He had seen two cases of septicaemic infection in France in both of which death occurred in spite of intensive treatment. When the infection was in the blood the drug was not of the same value as when it was in the body tissues, and in practice blood infection by the streptococcus failed to respond to chemotherapy. The same, in his opinion, was true of gas gangrene of the developed type in which there was gross necrosis of the muscles with constitutional symptoms. Every surgeon would perform an operation, clearing out the necrotic tissue, but he did not believe that sulphanilamide had a very great influence on the progress of the condition. He had seen cases treated locally by operation and with full doses of sulphanilamide, but the condition had progressed and amputation had to be performed, and the patient had died.

In conclusion he said that he had only been able to give impressions, but he did not believe that at the present time many people had much more to offer. There was some tendency to use this new therapeutic weapon indiscriminately. It was to be hoped that perhaps before the end of the war the exact value of these various drugs, both in prophylaxis and in treatment, would be known, their limitations understood, and it would be determined how far the surgery of wound excision was necessary and to what extent surgical procedure might be modified.

Objectives on which to Concentrate

Colonel LEONARD COLEBROOK said that peacetime experience with the sulphonamide group gave some indication as to what might be expected in the treatment of war wounds. He thought that the plan adopted in some hospitals at the time of Dunkirk of giving one of these drugs to the whole convoy regardless of their infections or the length of time which had elapsed since the infliction of the wound was not going to get them very far.

Certain definite results from the careful use of the drug might be expected. The first of these was the prevention of haemolytic streptococcal infection, although there was very little evidence from human beings as to what could be done in this direction. Some important experiments on mice had been conducted by E. D. Hoare. Three groups of mice were injected with haemolytic streptococci: the first group were not given any sulphanilamide, and all died; the second were treated some hours after infection, and some survived; while the third were given moderate doses of the drug three hours before infection, so that at the time of infection a little was remaining in the blood, and these recovered. He saw no reason to doubt that something of the same kind would happen in human beings, and if it could be known that men were going to be infected matters could be arranged so that they had a little sulphanilamide in their blood. But the great majority—something like 95%—of the wounded in war were not infected by haemolytic streptococci at the time of injury; their infection occurred at any time within a week afterwards as a hospital infection, and it was difficult to arrange prophylactic treatment unless the patient was put on a sulphonamide for seven to ten days to ensure that he had some in the blood at the time of his problematical infection. This would not be justifiable; many patients would vomit and feel miserable, and even worse harm might be done. A sulphonamide drug would be valuable in a case of secondary operation when there was a suspicion of haemolytic streptococcal infection, the right principle being to arrange the first dose in such a way as to ensure rapid absorption, which was to give the dose in solution, preferably citric acid or lemon, and the subsequent doses should be given in uncrushed tablets to ensure slow absorption. Prophylactic treatment should be administered in four-hourly doses so as to keep up a steady level in the blood.

Secondly, it might be possible to arrest infection by haemolytic streptococci if prompt and vigorous action with sulphonamide compounds were taken. More should be done in blood examination; there had been far too much casualness, patients being supposed to have the same reaction. Proseptasine and soluseptasine were useful only in very mild infections.

Thirdly, as to the prevention and arrest of infections by the anaerobic bacilli, the animal experiments carried out by Stephenson and Ross at the Wellcome Physiological Research Laboratories, among others, made it fairly certain that the infections of *Cl. welchii* could be controlled, but inasmuch as anaerobic infections were a good deal less susceptible than streptococcal ones to these drugs, it was probable that more could be done by local application than by oral administration. Probably a combination of the two would be the best of all. Much might be achieved in heading off anaerobic as well as other infections by the application of sulphanilamide packs to wounds. The war furnished the best opportunity possible to investigate the question, which called for intimate co-operation between surgeons and pathologists. He would not leave it to the surgeons, because definite microscopical evidence of restraint and growth was needed. A few cases carefully controlled would be worth a hundred observed by the "naked eye."

Finally, it might be expected that haemolytic streptococci would be got rid of quite quickly from long-standing or superficial infections by the application of sulphanilamide powder to the lesion. He had had the opportunity of testing this theory in Sir Harold Gillies's plastic surgery unit, where there were a large number of old burns and road accident cases which had become infected. He had been astonished at the results, especially as there was something in the discharges and pus which neutralized the action of the sulphonamide. In these superficial granulating wounds which were not deep the infection could be eliminated within two days. If that experience was confirmed, and a fresh infection was not found to develop, it seemed to him that this would be a landmark in surgery. The wounds would be healed more quickly and thus an enormous reservoir of infection would be cleared from hospital wards.

If the value of sulphonamide compounds in relation to wounds was to be learned, there must be concentration on certain objectives. Convincing data must be obtained as to whether local application in the wound would hold up bacterial growth, as to whether oral administration would prevent haemolytic streptococcal infection, and as to whether the observation that the flora of wounds could be altered and organisms got rid of by dusting or the use of one of the sulphonamide drugs wa refuted or confirmed.

Clinical Experience after Dunkirk

Mr. W. H. OGILVIE said that most of them were thinking in terms of the last war, and when they considered how the present war differed from the last infection seemed to be far less of a problem. The explanation was not so simple. The wounded were less tired and dehydrated; their clothes were cleaner, many of the weapons were far less damaging to the tissues than the shell and hand grenade which formed nearly the whole of the destructive armament of the last war, and he thought that the streptococci and anaerobia of to-day were feeble amateurs compared with their ancestors of 1914–18. But after making these allowances much of the credit must go to chemotherapy. This opinion was based on the observation of about 300 wounded, almost entirely from Dunkirk. Chemoprophylaxis when started early, unaccompanied by any form of treatment, put the cases into good condition, while those who arrived at the hospital infected, in whom chemotherapy was started immediately after débridement, quite early showed a state of repair and clean granulation which allowed of closure by approximation or grafting.

The cases from Flanders and Dunkirk were seen never earlier than three days, and most of them five days, after being wounded. Many had been operated on, others had relatively unimportant wounds and were fit to travel. Of the remainder there were two groups: those who had had sulphanilamide, and those who had not. About fifty had had sulphanilamide in varying doses; some had had it at once, others in transit; in some it had been continued regularly, in many it had been irregular. But considering the late stage at which these cases arrived they were surprisingly fit and the infection of the wounds was minimal. The majority of the wounds were caused by bullets, the weather was dry, many were wounded in sand and on board ship; but even allowing for these circumstances the contrast between these men and those who arrived at Rouen in 1918 was astounding, and the contrast between those who had been given a sulphonamide in transit and those who had not was almost equally so. The men who had had no sulphonamide drug and were admitted to hospital two or three days after being wounded were most heavily infected. On being put on to a sulphonamide drug the patients had a temperature which rarely went above 100° F., and a pyrexia which seldom lasted for more than three or four days. If it lasted for ten days it was nearly always due to the pocketing of pus. Chemotherapy had, however, produced a new lesion—the "sulphonamide" abscess. It was a cold abscess, and when opened contained an odourless pus.

Mr. Ogilvie went on to describe some of the cases he had seen. He also referred to certain disadvantages attending the use of sulphapyridine in the ordinary hospital. Apart from its greater cost it made patients vomit and feel miserable, and as it was essential to get a constant dosage and encourage fluid intake its use was difficult. The dose he gave was three tablets, crushed, to start with, followed by two tablets four-hourly for forty-eight hours, and one tablet four-hourly for the following forty-eight hours. Among the many wounded patients treated with this dosage there were no complications.

Comparisons and Combinations

Prof. A. FLEMING upheld Colonel Colebrook's appeal for the association of the laboratory with the surgeon. It was seldom that more than one specimen was sent to the laboratory from a patient; apparently if a report were made that there were haemolytic streptococci it was considered adequate until the patient either died or got well. There were three main types of infection in wounds: anaerobic (causing gas gangrene), haemolytic streptococcal, and staphylococcal. Sulphanilamide was effective with the haemolytic streptococcus, sulphapyridine with the pneumococcus, and sulphathiazole with the staphylococcus. Sulphanilamide was the weakest of the three, sulphapyridine a good deal stronger, and sulphathiazole stronger than either of the other two—so strong that it affected the staphylococci, which the others scarcely touched. He had found sulphathiazole much stronger than the others in its inhibitory action in the blood stream.

He also mentioned that for about twelve years a preparation named penicillin had been used for isolating bacteria in the laboratory. Lately Gardner, Orr-Ewing, and others from the Sir William Dunn School of Pathology, Oxford, had published a series of experiments in which by a method of extraction they had obtained a non-pure substance which showed most extraordinary effects in mice against staphylococcal, streptococcal, and other septic infections. He had tested this as an anti-bacterial agent in the laboratory and had found it, weight for weight, about ten times more effective than sulphathiazole, which itself was better than sulphapyridine and sulphanilamide. Some chemist was awaited who would synthesize it entirely, and the sulphonamides would disappear.

Civilian Casualties in Air Raids

Mr. E. W. RICHES mentioned three cases he had had recently of civilian air-raid casualties; one of them was not given a sulphonamide preparation, and the other two were. The patient who was not given the sulphonamide drug had within forty hours a severe infection of *Cl. welchii* in the wound from the ankle to the thigh. He was repacked, put on the sulphonamide drug, by injection and by the mouth, and when he was evacuated to the base hospital the wound was clean and granulating and the infection cleared up. Of the other two cases one had a compound fracture of the right arm, about half the skin being raised in a flap. The fracture was set, débridement carried out, the wound packed with 3 grammes of sulphanilamide powder, and put into plaster. Temperature came down after two or three days, and there was no pyrexia until after the second dressing. In the third case the skin of the leg was turned down just like a stocking, the wound was excised, débridement carried out, 5 grammes of sulphanilamide put into the wound, and the limb immobilized on a splint. There was no pyrexia after the first three days, the wound was dressed after a fortnight, some of the flap was about to slough because it was deprived of its blood supply, but there was no sign at all of any local infection. These three cases were comparable in that they were all dirty, large areas of tissue were exposed and soiled with debris, plaster, and glass, and they were all treated in exactly the same way by excision of the edges and immobilization, but the first had no local sulphanilamide and the other two had, and it was the first which developed a serious infection of the limb. He had been impressed by the value of the local application at the time of the primary operation. Air-raid casualties were received very early, and one waited only for them to recover from the shock before taking them to the theatre. He was sure that it was the wrong thing to do frequent daily dressings and wrong to do dressings in the ward. The first dressing should be done in the theatre, with precautions equal to those observed in the original operation. This was one of the difficulties in collaborating with the pathologist, with whom all surgeons would like to co-operate more. Another difficulty was that the pathologist was often some miles away, and communications were uncertain and sometimes impossible.

Mr. DUNCAN FITZWILLIAMS said that his experience of infected knee-joints was that nothing saved the patients but primary amputation. One of the speakers had referred to the increasing incidence of hospital infection. Could the hospitals be cleansed or some steps be taken to prevent infection of the wounds? The PRESIDENT asked how much sulphanilamide should be put into the dressings, and whether there was danger of poisoning.

Sir THOMAS DUNHILL gave an account of sixty-five patients treated at his hospital, all of whom were regarded as extremely ill. They were patients whose knees and elbows were shattered and ankles broken. They were in a very unhappy condition on arrival; pus was soaking through the plaster to the beds, and the stench in the wards was beyond belief. In the last war he would have felt that three-quarters of these men would require to have their limbs amputated at once, and that streptococcal septicaemia would occur. There was no question of treating them in the Trueta fashion, but it was desired to see what fixation would do. Their condition was assessed as quickly as possible, the worst being dealt with quickly. Two died from secondary haemorrhage

during the ensuing few weeks, and one from gas gangrene on the night he arrived; but apart from these three none of the sixty-five died. Their tongues were dry, their skin was the skin of poisoned people; they had no appetite and were in pain. A number got rigors, and when this occurred the plaster was taken off; if the drainage could be improved this was done, and the plaster reapplied. They all had a sulphonamide drug to begin with, which was stopped after a number of days when it was felt that the appropriate doses had been given. A good many times when rigor occurred he thought there was septicaemia, but it was not septicaemia, it was bacteriaemia, which he believed was controlled by the sulphonamide which was given. Often he thought that amputation should be done. Yet not one had died, all were walking with some kind of apparatus, and there were very few in whom the wounds had not dried completely. Their tongues were clean, their colour good, and their demeanour cheerful. There was no doubt that the haemolytic streptococcus had been there all the time, but it had been controlled. He believed the result to be, as to three-quarters of it, due to fixation, and, as to the remaining quarter, to the sulphonamide preparation, which, with fixation, seemed to be able to scotch the spread of infection. In not one case was amputation done.

Mr. DICKSON WRIGHT said that many manufacturers were recommending sulphanilamide ointments, and he asked whether these were effective. Sir WILLIAM WILLCOX asked whether Colonel Colebrook recommended giving sulphonamide compound by the mouth as well as the local administration, and had prontosil soluble been used for the first two or three doses for quick absorption?

Colonel PAGE said that it had been laid down by those who had introduced the sulphanilamide pack that 5 to 16 grammes might be used in the pack, according to the size of the wound; 20 grammes was regarded as the limit of safety.

Colonel COLEBROOK also replied to some questions. He said that he would hesitate to use more than 20 grammes in a sulphanilamide pack, and he did not suppose there was any advantage in using more. In answer to Sir William Willcox, for preventive purposes it was best to give one or two doses by mouth. He did not think prontosil soluble had merits for quick absorption. If sulphanilamide was given in solution it was absorbed in two or three hours. With regard to hospital infection, this was the more likely because of inefficient ventilation due to restricted lighting. The best method of cleansing the wards was to formolize the rooms one at a time with a blow-lamp and atomizer. This would get rid of streptococci, though he did not know that it would get rid of all the organisms. He had little to say with regard to sulphonamide ointments. Sulphanilamide was absorbed quite well from a greasy base, but the difficulty was that there was a foreign body left in the wound in the shape of the base. A question had been asked as to the treatment after putting on powder. At his hospital they simply powdered the wounds, and put on a moist saline dressing, covering it with jaconet. This was done to maintain the activity of the leucocytes, which was encouraged by keeping the wound slightly moist.

SPONTANEOUS HAEMOPNEUMOTHORAX

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on October 4, with the president, Dr. R. H. MICKS, in the chair, Dr. H. QUINLAN gave a short account of a case of spontaneous pneumothorax with intrapleural haemorrhage in a young man aged 28 who had previously been in good health. There was extreme distress, due partly to air under great pressure and also to the presence of blood in the pleural space. Sufficient air was allowed to escape to relieve pressure effects and a small amount of blood was removed. After fourteen days three and a half pints of fluid which looked like pure blood was aspirated. Complete recovery followed. Dr. G. T. O'BRIEN observed that it was quite common to see cases of pneumothorax in which no lesion of the lung was found after re-expansion had taken place. These patients were frequently in very good health. There was often a history of two or three attacks of pneumothorax, and this he thought rather precluded anything of a tuberculous nature. Dr. BRENDAN O'BRIEN said that he had recently read a report of two or three cases of spontaneous pneumothorax complicated by haemorrhage; the patients had died in a comparatively short time. In these cases the air pressure was at first very high, and the subsequent collapse due to the bleeding had occurred some time later. It was possible that the introduction of a needle to relieve the air pressure might have damaged an intercostal vein. He had been told by Dr. Maurer of a case in which, during an operation for the division of adhesions, an aberrant vein had burst. The patient had bled profusely, and he had been unable to coagulate the bleeding vessel. Later the bleeding had ceased, but when the patient had begun to recover from the shock it had started again and the patient had died. Dr. W. R. F. COLLIS said that in two of seven cases of spontaneous pneumothorax he had come across there was no sign of tuberculosis at all. Dr. ALAN THOMPSON said that cases of spontaneous pneumothorax in the apparently healthy were quite common in Eire.

Correspondence

London's Air Raids

SIR,—After two months' continuous experience of control room and outdoor duties in an outer suburban area I should like to make one or two controversial comments which other readers may care to discuss.

1. The presence of a doctor is of considerable value where people are trapped, chiefly, in my experience, because by giving morphine as soon as any part of the patient can be reached shock is lessened and suffering minimized. I have followed up morphine-treated and other cases to hospital; there is no doubt about the contrast between the condition of the two groups on admission. Probably actual saving of life is occasionally effected. One needs a convenient method of carrying a charged 1-c.cm. syringe under more or less clean (if by no means sterile) conditions, so that it does not fall out of the pocket or empty itself at whatever angle. My improvisations up to date are not very satisfactory, and I should like the advice of a man with previous experience in the field.

2. The presence of properly trained first-aid personnel "at the forefront of battle" in rescue work ought to be insisted on. Our rescue parties do admirable work and appreciate the importance of gentleness, but even in the simple job of lifting out a patient freed from debris and getting him on to a stretcher the contrast between work by rescue parties, police, wardens, or public and work by stretcher parties is extreme, and the consequent shock is probably considerable. The proper methods are not only gentler; they are usually much quicker as well.

3. The number of casualties, except in such rare events as hits on public shelters, is altogether smaller than we were taught to expect. In consequence it is usually wise to send out enough ambulances to deal in one trip with the believed total numbers of casualties.

4. At incidents there is inevitably a tendency for a needless crowd to collect, consisting partly of the public, but often mainly of police, wardens, stretcher party members, etc. There is a need for police (in consultation with rescue party and stretcher party leaders) or wardens to keep more rigorously out of the way all those not at any given moment usefully employed.

5. The number of cases needing first-aid post treatment is small in proportion to deaths and serious injuries, and almost incredibly small in relation to the material damage. Our posts have been of value chiefly in treating for a few hours cases of shock, very few of which subsequently needed admission to hospital.

6. For some eighteen months I had taught my stretcher parties that speed was of paramount importance—a lesson which some of the more experienced first-aiders resented on the grounds that speed meant roughness. It was, in fact,

astounding to discover that jobs which they thought ought to take ten to fifteen minutes could be done gently in three or four minutes. It is now obvious that one of the major reasons for speed—more cases waiting—is less important than was expected. I have, therefore, recently stressed the need (after getting serious cases away) to visit and soothe, so far as possible, those cases of minor contusions, slight nervous shock, etc., which wardens often locate nearby. This is useful work which, under war conditions, first-aid minded and trained stretcher party leaders and senior members can properly undertake.—I am, etc.,

Nov. 2. E. B. GROGONO.

The Problem of the Shelters

SIR,—The recent letters published on the shelter problem have summarized the present position admirably. The case for the deep shelter was very ably presented by Dr. E. Cronin (October 19, p. 537) and the case for the Government also was skilfully put by Mr. R. C. Sedergreen (November 2, p. 609).

Many of the inhabitants of heavily bombed areas, intensely patriotic though they are to a man, wonder why the official policy has been against the deep bomb-proof dormitory shelters. Our Bomber Command makes it obvious to all who read their newspapers that its policy is intensive night bombing of enemy military objectives, and the *Luftwaffe* have not taken long to discover that more of their planes return from nocturnal attacks than from daylight raids. No doubt some time before this war began the R.A.F. realized that aerial bombing was more likely to be a successful practical proposition at night than during the day-time between air opponents who were more or less evenly matched. Obviously those responsible for planning our shelters were not aware of this, for it is obvious to anyone that public shelters have not been planned as dormitories. One glance at any trench shelter will confirm this.

It is interesting to note that two of your correspondents on this subject apparently have little confidence in politicians. It is unlikely that much faith will be shown in these gentry until they have some kind of training for their profession, and while the various Ministries are rapidly passed from one deserving applicant to another as though each were well able to specialize at short notice in any particular direction.—I am, etc.,

London, S.W.13, Nov. 2. F. M. DAY.

Spread of Tuberculosis in Shelters

SIR,—Dr. P. L. T. Bennett has written admirably (October 12, p. 502) on the danger presented by the tuberculous patient in shelters, both to himself and to other occupants. Dr. Philip Ellman repeats some of Dr. Bennett's observation (October 26, p. 570), and suggests that before granting season tickets for shelters an initial general health examination should be carried out followed by periodical examinations for renewal of season tickets. He continues:

> "So far as tuberculosis cases are concerned the names of all patients notified in a given area would naturally be available to the examining doctor from the records of the medical officer of health. In this way it should be possible (*a*) to demand the compulsory isolation by ambulance service of all advanced cases to special institutions in the country; (*b*) to secure institutional treatment of early cases of pulmonary tuberculosis; (*c*) to evacuate all known infective cases not engaged on essential work to safe areas where it will be possible to maintain the necessary hygienic routine and discipline; and (*d*) to arrange for those quiescent tuberculosis subjects engaged on essential services special shelter facilities."

Dr. Ellman is, or has been, a tuberculosis officer. He surely cannot really believe that this most ambitious of programmes is so easy of accomplishment. Why should one be successful with items (*a*) and (*b*) when the tuberculosis schemes have been trying to do the same for many years with little success? Surely not by waving the season ticket for the shelter in front of the patient and tearing it up when he refuses to go into hospital or sanatorium. Item (*c*) is a tall enough order when we remember the difficulties of getting even mothers with young children to agree to evacuation; when the "necessary hygienic routine and discipline" are to be provided as well, and when we think of the massive amounts of tubercle bacilli that will be introduced into rural districts among populations whose incidence of infection is low, one can only admire the courage of the proposer of the suggestion. In regard to item (*d*), what is meant by "special" shelter facilities? "Hot and cold" laid on, or separate shelters altogether? If the latter, no doubt we should find the holders of pink season tickets travelling to the special "tuberculous" shelters after the other members of the family have waved him good-night at the door of the communal shelter nearer home.

No, Sir. The solution lies in the proper carrying out of the tuberculosis schemes, the work of which should not be curtailed but largely extended—more staff, more *x*-ray apparatuses, more contact examinations, more beds, and more facilities for adequate training of tuberculosis workers (including chest surgeons). The whole tuberculosis scheme is based on the assumption that tuberculosis is an infectious disease, but only lip service is paid to this principle. If that were not so, contact examinations would be carried out extensively and properly, sputum-positive cases would not be discharged from sanatoria as fit for full or even "light" work, and advanced cases would be compelled to stay in hospital instead of being allowed to return home to their young children. The compulsory principle would be applied as it is in other infectious diseases. It is not applied, in most instances, not through ignorance or through lack of understanding of what is involved, but simply because if we are to compel in connexion with a disease the treatment of which is prolonged and uncertain, we must also be responsible for the support of the family while the breadwinner is away from home and of the family and himself when the latter is discharged from sanatorium not cured, either because he cannot be or because the proper principles of treatment have not yet reached the institution concerned. Dr. H. B. Morgan has recently in the *Lancet* put this point better and more forcibly than I can hope to do.

One more thing if you will grant me the space, Sir. Dr. Ellman, as some other correspondents before him, seems to endow miniature screen photography with a magical quality which will wipe out tuberculosis from our midst. It is time that it should be emphatically stated that miniature screen photography does not produce results as good as ordinary radiography, that its use can only be justified on the score of saving of time and perhaps expense when *very large* numbers have to be dealt with in a short time—for instance, recruits—and that it would perform a great disservice to both the control and further study of the disease if it replaced ordinary radiography under any other circumstances, making nought of the labour and thought that have gone into perfecting chest radiography in the last twenty-five years.

It is with great regret that I must ask you to publish this letter anonymously, but as I am a tuberculosis officer myself this must be so, since identification of the views I have expressed with those that may be held by my authority must be avoided.—I am, etc.,

Oct. 28. TUBERCULOSIS OFFICER.

SIR,—I have read with very great interest the various letters on this subject in your recent issues, but I was very much surprised to read in Dr. C. K. Cullen's letter (November 2, p. 608) that he "profoundly disagreed" with my conclusions. If my colleague would be good enough to read my letter of October 1 carefully I feel sure he would recognize that we are actually both in favour of the same procedure—namely, evacuation of the tuberculous. But where we possibly disagree is with regard to the immediate steps to attempt to remedy this most difficult problem, and apparently Dr. Cullen would still have his tuberculous patients continue to use public shelters until further action by the authorities was definitely instituted. I certainly agree, however, that many patients are now much more desirous of evacuation than before. Perhaps the strain of the nightly attack has made a difference during the past month; but, before, it was very difficult to persuade patients who were ill to go away, either to hospital or to leave their families, even if provision could be made for their evacuation.

Whether I personally "stay put in Fulham" at night has nothing whatever to do with it; let it suffice to say that I do what is required of me, both in Fulham and elsewhere.

Admittedly certain areas have suffered worse from aerial attack than others, but I can assure Dr. Cullen that I have quite sufficiently unpleasant experience of devastation wrought by bombardment, both in the last war and in this one. In spite of this I still stick to my opinion that it is better for the tuberculous individual to stay in his own house if possible, both on his own account as well as for others; and that the question of further and more satisfactory procedure should be urgently considered by the Standing Advisory Committee on Tuberculosis, who are in the position to deal directly with the problem with the Ministry.—I am, etc.,

P. L. T. BENNETT,
M.R.C.S., D.P.H., Tuberculosis Officer, Fulham.

Nov. 2.

Shelter Safety

SIR,—I admire Dr. C. K. Cullen's trenchant letter on shelter safety (November 2, p. 608), and I support fully his four practical constructive suggestions for promoting the safety of our people from aerial attacks. These suggestions should be carried out not only in London but in all large centres of population (including those to which evacuees are sent in numbers by the Minister of Home Security) if we really mean to win this war. We must protect fully our home front line of defence—men, women, and children—the neglect of whom in the past year or more has played definitely into Hitler's hands, and doctors must largely share the blame for this. We have all had Barcelona's experiences to warn us on the need for action on these lines two or more years ago! The tented hospital in which I was serving over-seas during the last war was bombed twice, and several patients who left the wards against orders for trench shelters outside were killed. Indeed, I am so deeply impressed with the urgent need for deep, relatively safe (according to architects and scientists) shelters of the Haldane type in order to give security, sleep, and rest to workers under sanitary conditions that I have written recently to four members of Parliament of three Parties, whom I know either as friends or opponents in the past, and I have asked them to invite the Minister of Home Security to take the action that Dr. Cullen and many others advocate.

As an ex-tuberculosis medical officer I simply can't make sense of those "experts" who advocate the use of Anderson shelters for tuberculous persons, unless it is that money is more valuable than life. Many years ago I helped to form a large branch of the then National Association for Consumption (now Tuberculosis), and a sanatorium for consumption, and now I hope the present Standing Advisory Committee on Tuberculosis will accept Dr. Cullen's invitation to sleep in an Anderson shelter and thus practise what they preach. Most of my friends find surface shelters so dangerous to health that they don't use them.

I am sure that there are too many "dead hands" in the medical profession "up top" (as Dr. Cullen classes them), and if we, as doctors, really mean to win this war they must come down to the level of ordinary common-sense citizens with a human sense of the relative values of life and money, and learn that the only hope of the world's salvation is the socialist objective of a peace which ensures freedom and justice for all races, white, yellow, and black, and not "riches" for one class or race only.—I am, etc.,

Woking, Nov. 2. F. G. BUSHNELL.

Evacuee's Sore Throat and Shelter Tonsillitis

SIR,—In company with Dr. C. de W. Gibb (October 26, p. 571) I feel that some comment is necessary regarding Mr. T. B. Layton's most recent contribution to the literature (October 19, p. 531), in which one can recognize a new text but the same old sermon, the relation between the two being rather forced.

My own assessment of evacuee's sore throat was that of an indescribable entity possessing only a label, the treatment of which took the negative form of abstention from tonsillectomy. Wherein this disease differs from holiday-maker's sore throat—a lesion I was about to invent myself—is not plain; and as the latter, to be topical, would need to await the breaking out once more of peace, I fear that my thunder has been stolen. While there may be such a disease as shelter tonsillitis, I cannot believe that anyone has as yet a sufficient experience of the bad results of its operative treatment to dogmatize on this point; and the citation of one case of otitis media as supporting evidence is hardly warranted.

I can as easily distinguish between judgment and execution as between the Lord Chief Justice and the Lord High Executioner, but why this red herring should justify the M.O.H. in prohibiting my operating for some months to come is beyond my comprehension. If Mr. Layton has failed over a period of years to bind us by the "no operation in winter" dictate it is unlikely that the M.O.H. will do so before the snow comes. In any event there is no conclusive evidence that this dictate does much more than impress impressionable parents. To be honest—and herein we do not differ from Mr. Layton's closing remarks—we pharyngologists must plead an ample ignorance and uncertainty about the whole tonsil problem. This does not, however, justify throwing the onus for a decision on the physician, even if he be of the old school; and a solution is not to be helped by an appeal for the plaudits of medically minded laymen and laywomen.

If anything must be deferred until the rising of the sap, let it be the addition to our textbooks of further vague diseases resembling mud in a wineglass. Perhaps it may then be found that these syndromes of October–November may not be visible with the coming of the spring.—I am, etc.,

F. MCGUCKIN, M.D., F.R.C.S.Ed.

Newcastle-upon-Tyne, Oct. 28.

Gauze Masks in Prophylaxis against Influenza

SIR,—The importance of preventing the spread of influenza, tuberculosis, cerebrospinal fever, etc., through droplet infection in shelters has been repeatedly stressed in your correspondence, and it has been pointed out that the wearing of gauze theatre masks by all suspects would prove an effective remedy (Dr. H. M. Harris, November 2, p. 610). The difficulty lies in finding out those who should be considered dangerous and forcing them to wear the mask.

I believe that the simplest solution is to recommend the wearing of a mask—provided at or below cost price—quite universally, not only for the dangerous but especially also for those who consider themselves in danger. The mask gives the wearer the best possible self-protection already under present conditions. If propaganda acquaints the public with this undoubted fact and the fashion has once been started the universal adoption of masks in shelters should not prove impossible. The gauze mask is not as awkward as, and more immediately useful than, the gas mask, which is already familiar to all of us, and I trust that it will prove more acceptable as a "protective veil" than as a "muzzle."—I am, etc.,

London, N.W.8, Nov. 2. F. E. LOEWY.

Psychiatric Casualties in London

SIR,—In Dr. George Pegge's interesting article (October 26, p. 553) on psychiatric casualties in London he remarks on the surprisingly small number of these cases. This has been my own experience at another large hospital, where the psychiatric casualties from the London area since the war started can be counted on the fingers of both hands. This is a most eloquent tribute to the adaptability of the British public to the unparalleled experience it has been called upon to bear.

The attendance at the psychiatric out-patient department fell off considerably soon after war was declared. This was to be expected for a variety of reasons which it is unnecessary to enumerate. But with the reassurance which the absence of air raids on London promoted, one would have expected the out-patient numbers to approximate to those of peacetime. This was not so, however, and for several months one psychiatrist was able to conduct the work of the department, which in normal times required the attendance of three. With the advent of active bombing, and more recently since the *Blitzkrieg* on London, one would have expected the psychiatric work of the hospital to become onerous. But this again has not proved to be the case, in spite of the fact that bombing has been rife in the immediate vicinity of the hospital and many casualties have been admitted to the wards. I do not

propose to discuss the more obvious explanations for the absence of nervous casualties, but venture to suggest that the facility with which one can now project one's fears and anxieties is likely to be the most important one. Depression, irritability, fatigue, and forgetfulness can be attributed to loss of sleep and economic difficulties as a result of war conditions. Impotence can be as readily explained away. In peacetime it was not always so easy to find something to blame for one's state of "nerves," and the absence of an adequate cause accentuated the symptomatology. With the constant threat to the existence of the entire community constituted by repeated and indiscriminate bombing, a superb scapegoat is at hand to account for abnormalities of personality and behaviour for which previously treatment in the psychiatric department would have been sought. For the same reason that psychiatric casualties are few at the present time, we must expect larger numbers once conditions of peace have been re-established.

All the nervous casualties which I have seen since the war started were constitutionally, psychologically, or environmentally determined *ab initio*. In other words, if the definition of an air-raid casualty was "the development of nervous symptoms in an individual in whom no discoverable predisposing factors could be ascertained," then I personally have not seen any. Such cases include a post-concussional state, an aphonia, hysterical paralysis (two cases), and several of anxiety state. It is extremely doubtful if anyone who suffers from a nervous breakdown has not in some way or another been predisposed to that breakdown. Among the Dunkirk evacuation cases there were patients in whom no predisposition to breakdown could be traced, but it must be remembered that the circumstances were very exceptional and that factors were operative there additional to those which usually precipitate neurosis. The most robust personality will succumb to stress and strain sufficiently powerful and long enough endured, but the individual who breaks down following participation in a common danger will in almost all cases be found predisposed to that breakdown.

It has been interesting to note the effect of war conditions on the more chronic type of neurotic case—namely, the constitutional hysteric, the hypochondriac, the obsessional, and those with some somatic accompaniment. Interference with their comfort, loss of sleep, and constant danger have not appeared to affect them appreciably. In most of them some improvement can be observed both objectively and subjectively since the beginning of the war. The herding together of individuals in shelters in the face of common danger and the levelling-out process in society which is consequent upon universal hardship have no doubt been essentially responsible. Further, the opportunity for dramatization afforded by narrow escapes, etc., is a decided factor.

Unfortunately the benefit to the few will be far outweighed by the subsequent development of neuroses in those who at the present time appear to be "taking it on the chin."—I am, etc.,

London, W.1, Oct. 28. ELLIS STUNGO.

Large-scale X-ray Examinations

SIR,—Misunderstandings seem to be arising. Dr. P. D'Arcy Hart (October 19, p. 534) is certainly right in regarding Dr. James F. Brailsford's statement (October 5, p. 471) as an exaggeration. As regards tuberculosis within the lung, out of, say, 10,000 radiographs I can recollect one of a woman having pneumothorax treatment on the right who developed physical signs at the left base with nothing on the radiograph at that time. Within six months there was a definite radiographic lesion in the suspected position. That is the only one I can recollect; there may have been others, now forgotten, but certainly not more than one or two.

With dry pleurisy at the time of the illness and afterwards it is quite different, for in my experience such lesions do not usually show on the film, though a pleural rub is easy to hear and the majority of such pleurisies are tuberculous. On the other hand, lesions discovered by the radiograph and not on clinical examination are very numerous, certainly more than one every clinic day.

To me clinical examination is uncertain and unreliable. Dr. Brailsford's view suggests that he has not much experience of clinical examination. Had the same attention been devoted to the interpretation of the findings of physical examination as has been done to *x*-ray appearances things might be different, but to-day findings by different observers of the same patient at the same time may vary widely, and also the interpretation of those signs. Some thirty-three years ago I attempted to check physical signs with post-mortem appearances in a small series of cases, and was astonished at the result; but I have no knowledge of any such work on a large scale, and for the interpretation of signs the student still seems to rely on the *obiter dicta* of great men.

Mass radiography, if suspected lesions are checked by a full-sized film, has probably a great future, but maybe it cannot be widely introduced during the war. Sir Henry Bashford's fear of the condemnation of persons solely on *x*-ray appearances (September 21, p. 395) is to me a proper fear, but can be avoided by a review of patient and film by someone with clinical experience.—I am, etc.,

Devon, Oct. 21. ERNEST WARD, M.D., F.R.C.S.

Débridement

SIR,—The hare I raised in my first letter on the definition of débridement seems to have taken the bit between its teeth, but this is all to the good, as it has led to emphasis being laid on the fundamental distinction between débridement and wound excision. This could not be better described than in Mr. Hamilton Bailey's letter (October 19, p. 535). If Mr. W. H. Ogilvie (October 26, p. 570) will refer to this letter rather than to the same writer's *Emergency Surgery* from which he quotes, I think he will appreciate the necessity for carefully distinguishing between the two terms. If so great an authority as Mr. Hamilton Bailey admits to only recently appreciating fully this vital distinction, we may be sure that many surgeons up and down the country do not yet do so. Indeed, reference to recent contributions to the literature prove that this is so.

Trueta is claimed as supporting Mr. Ogilvie's contention that débridement and excision are largely synonymous, but it is clear from Dr. Trueta's letter (with Dr. J. M. Barnes, September 14, p. 364) that he regards débridement as a method of securing drainage, suitable for use in a gravely infected wound when the time for excision has long gone by.

Mr. Ogilvie is, of course, perfectly right when he speaks of language as a living thing always growing and changing, but to wrest from its purpose a word from another tongue to replace an exact technical expression in our own, like wound excision, is doing ill service to both the beauty of speech and the science of surgery.—I am, etc.,

Liverpool, Oct. 28. JOHN T. MORRISON.

SIR,—Before introducing a foreign word in our vocabulary we should ask ourselves the following questions: What does the word really mean in its country of origin? Are we certain that there is not in our own language an expressive, short, and ready equivalent for it. The word "débridement," as used by the French, has three distinct meanings, which can be gathered from the context in which it stands. Used alone it denotes an operation for the release of adhesions or bands constricting an organ or organs—for example, the division of the constriction ring of a strangulated hernia. Used in connexion with a suppurating focus it means incising largely for the drainage of extensive gatherings of pus. Lastly, when used in connexion with the words "débridement d'une plaie" it simply means *enlargement of the wound* in order to explore it and/or to remove foreign bodies from it, or to provide free drainage in a wound that is already infected.

I was last year able to verify the accuracy of these definitions, which are given in various French dictionaries (technical and general), by personal communication with Dr. Marc Iselin, and I was interested to note that he laid special stress on the very limited meaning of débridement when used in connexion with the surgical treatment of wounds. I have been unable to find out when and by whom this word was first introduced into the British medical literature, but I have observed that its real meaning has been and is being distorted by all writers who employ it. This was the reason why Mr. T. B. Mouat and I decided to add a special paragraph in our preface to the English edition of Iselin's *Surgery of the Hand*, pointing out

the fundamental difference between the meaning of débridement and excision of wounds.

Débridement means one thing and excision quite another, and it cannot be too strongly emphasized that the former has no connexion with the latter or with debris in the wound unless the word is used to signify the preliminary act of enlarging a wound that has extensive undermining of its edges or side-tracks that one wishes to expose to the light of day during the operation of exploration and excision of, and extraction of foreign bodies from, the wound.

Our duty, therefore, is quite clear: we should drop the word entirely, since it is most ludicrous on the one hand to use it instead of enlargement, which is a good English word, and, on the other hand, to attach to it a meaning that it does not possess. The primary surgical treatment is often not only a long, painstaking, and tedious operation, but of such vital importance to the patient that its technical details cannot be repeated too often; and I think it is a mistake to label it by some simple word or phrase. If, however, we must have a word for it, let us deliberate and not make fools of ourselves when paying the French a compliment. Surgical "revision," which has just been suggested by Mr. R. T. Payne (October 12, p. 503), is unsuitable. I would suggest as a compromise the words explore, excise, and extract, or their equivalents exploration, excision, and extraction.—I am, etc.,

T. M. J. D'OFFAY, F.R.C.S.,
Oct. 27. Surgeon, City General Hospital, Leicester.

SIR,—If, as Mr. W. H. Ogilvie suggests (October 26, p. 570), débridement denotes the same technical step as excision, why use the word at all? Débridement has, however, a quite definite meaning, and I agree with Mr. Hamilton Bailey (October 19, p. 535) that it is undesirable to continue to use it as synonymous with excision.

d'Offay and myself recently translated Iselin's *Chirurgie de la Main*, and in our correspondence we sought guidance from that author on the exact meaning and proper use of the word. Iselin in his reply strongly deprecated the improper use of débridement in recent British and American surgical writings. He wrote that the word "débridement" was introduced by Desault (1744-95)—who, by the way, was the founder of the *Journal de Chirurgie*—and was used both by him and by Larrey to mean the act of making an incision or incisions to enlarge a wound to facilitate removal of a missile or any other retained foreign body or to provide wound drainage. *Wound excision* is a completely different procedure, which was gradually adopted during the war of 1914–18, and, as Iselin very properly remarks, "was separated from débridement by a gap of more than one hundred years and by the introduction of general anaesthesia, which alone made it possible."—I am, etc.,

Sheffield, Oct. 30. T. B. MOUAT.

Realism in First-aid Instruction

SIR,—During months of first-aid practice a system has evolved which demands from the instructor less time spent in preparation of casualties while giving greater realism for the instructed. Flat plaques are made consisting of a few layers of plaster-of-Paris bandage with folds on the surface which, with the help of red paint or bright red lipstick, are made to resemble wounds of entry or exit. Their merit will vary with the artistic flair of the craftsman, but it is not difficult with a little imagination to produce passable semblances of wounds, and these, with the help of chips of beef bone, small rubber tubes, charcoal powder, etc., serve to indicate compound fractures, arteries laid bare, or a charred electric burn, etc. The plaques have a backing of Unna's paste about one-eighth of an inch thick, and with very little warming at a fire or over a lamp can be made to stick on the patient's skin or scalp wherever the instructor pleases.

With, say, eighteen of these imitation wounds of different sorts a series of ten or twelve patients can be prepared in as many minutes, and all kinds of problems set for first-aid party and F.A. post personnel. Simulations of simple as well as compound fractures and penetrating or perforating wounds of head, chest, or abdomen can be produced. Arterial haemorrhage is represented by a bright red rag, the corner of which is wedged under a plaster fold, the rag being removed or replaced according as the instructor judges that haemorrhage is controlled or recurs. Venous haemorrhage—for example, from the curving ink mark which stands for a varicose vein—is shown by a purple rag. Face powder to give the pallor of shock, aq. rosae to simulate haemorrhage from the mouth, red lipstick streaks for ear or nose bleeding—all help to give verisimilitude.

Our patients are usually St. John Ambulance cadets, who co-operate keenly and themselves learn in criticizing their elders. They normally tell first-aid personnel where supposedly painful injuries are, and may register shock, pain, hysteria, etc. The instructor can confine his attention to criticism or asking questions on the underlying anatomy. The patients need not be labelled at all unless to indicate them as male or female. The plaques, of course, are easily removable after the casualty has duly passed through the final stages of his treatment in F.A. post or hospital, and are ready for repeated use in new problems later.

Possibly this type of thing is done in other areas, but visitors here have found novelty in it, and so I venture to record it. This use of Unna's paste at least is interesting, and an improvement on the scraps of elastic plaster bandage originally used.—I am, etc.,

Denbigh, Oct. 22. D. G. DUFF, *M.C.*, F.R.C.S.Ed.

Pressure Points of Arteries

SIR,—Concerning Dr. R. L. Kitching's letter on this subject (October 26, p. 572) may I point out that the pressure-point for the femoral artery could be defined quite simply and concisely as the mid-inguinal point. The mid-inguinal point is a point *on the inguinal ligament* midway between the pubic symphysis and the anterior superior iliac spine, and the inferior convexity of that ligament makes the point fall some distance below the symphysis iliac line on the pressure-point of the artery.—I am, etc.,

Edinburgh, Oct. 28. A. M. MACLEOD.

SIR,—Dr. R. L. Kitching (October 26, p. 572) makes the remarkable statement that textbooks on anatomy and surgery seem to be very little better than *First Aid to the Injured* so far as topographical anatomy is concerned. In connexion with haemorrhage from the femoral artery, he finds fault with the first-aid instruction which says: "Find the fold of the groin and apply the thumbs (one on the other) upon the pressure-point, grasping the thigh with the hands, the pressure-point having been determined by an imaginary vertical dropped from the mid-point of the symphysis-iliac line." Dr. Kitching suggests that this instruction is unsatisfactory and bewildering to the first-aider. I agree with him that it is unsatisfactory, but for an entirely different reason. No first-aider or anyone else could maintain effective pressure in this manner except for a very short period. The method I have always taught my first-aid classes is: Identify the position of the vessel (as above), but instead of pressing the thumbs over the "pressure-point" and the fingers round the thigh, place the heel of the clenched hand over the vessel where it crosses the pelvic brim (left fist for right thigh and vice versa) and add any degree of pressure necessary. This method is not tiring to the attendant, while it is simple, speedy, and effective and can be maintained for an indefinite period.—I am, etc.,

Frodsham, Cheshire, Oct. 29. HENRY H. JAMES, M.D.

The Shock of the Ambulance Journey

SIR,—I am not certain that, even at this stage of the war, it is fully realized how shock-producing an ambulance journey may be. I should like to think that all ambulance officers of local authorities, especially in country districts, had themselves tried out transport on a new all-metal Home Office stretcher on the upper tier of a regulation stretcher carrier in an average A.R.P. ambulance. Driven a little excitedly, preferably over hilly roads with frequent corners, they may find, after a mile or two, especially if brakes are not too well adjusted, that though at the start they were in a condition of A1 fitness, they are reduced to one of collapse. I speak from experience! As a war substitute for a winter cruise this has an arguable advantage, but as a preparation for operation only condemnation is possible.

The patient slides on the shiny flat "bed" of the stiff wire mesh to such an extent that with sudden braking a concussion, or even a fracture of cervical vertebrae, is by no means impossible. This may happen especially on a down-slope when the patient is precipitated head first into the ambulance partition.

The remedies, of course, are slow and careful driving, and, on any other than the shortest journey, fastening the patient securely to the stretcher. These are rules which must, I think, be very firmly insisted on.—I am, etc.,

Oct. 22. D. G. DUFF, M.O.H., Denbigh.

Our Unused Influence

SIR,—Doctors are queer people. In your issue of October 12 (p. 507) appeared a letter from a medical man in South Africa. It was probably one of the most important letters ever published in the *Journal*, and yet, although I have waited a fortnight to see, there has not been a single reply. Dr. George H. Alabaster pointed out that although the medical profession is concerned with the saving of life (on a comparatively small scale) it has made no concerted effort to preserve peace in the world and thereby save a hundredfold more lives.

This is terribly true. The profession as a whole is reasonably well educated, possibly fairly cultured, yet it is apparently utterly indifferent to the big issues on which depend the lives and happiness of millions of people. Three-quarters of the world's population is now at war, and so far as I know the medical profession in this country have not made a single effort to direct or mould our political or international destiny. We wrangle about fees for medical aid notes, we have committees to discuss whether doctors shall be paid £50 or £70 per annum for some service or other, we send deputations to the Government, but only to the Minister of Health. We never dream of asking the Prime Minister to do this or that in the realm known as political. We made not a single protest against the country's handling of Italy or Japan. We never wrote a single letter to the League of Nations (except to its Health Department).

Without scientists modern war would be impossible, but we never think of bringing pressure to bear on our fellow scientists who devote their lives to making bigger and better bombs and mines. We have a few of our profession in Parliament, but their influence is chiefly devoted to questions of how to keep up practice receipts.

It is time we became less afraid of, or more interested in, the bigger issues of national life; time we realized not only our responsibilities but our power. It is time we read more and pondered more. Plumbers, lawyers, bricklayers, and architects take far more interest in our national life than we do; yet they are, in some ways, less fitted to build a strong and determined British Empire; less fitted to rid the country of the sloth, procrastination, and spinelessness which have landed us in this present ghastly mess. Our example is deplorable. I believe our Colonial colleagues are much more aware of this than are we.—I am, etc.,

Balby, Doncaster, Oct. 30. ROBT. W. L. WARD.

Pregnandiol

SIR,—In your leading article on pregnandiol (October 26, p. 561) the following statement is made: "Cope in our present issue (p. 545) states that its [i.e., pregnandiol] complete absence is always evidence of serious abnormality."

This gives such an erroneous impression of the conclusions reached by me in the article referred to that I would strongly urge all interested to read the original more carefully before assuming that any such dogmatic generalization was made.—I am, etc.,

Oxford, Oct. 28. C. L. COPE.

*** We regret if we have misrepresented Dr. Cope. The statement in the summary of his interesting article was as follows: "An attempt has been made to assess the diagnostic value of pregnandiol excretion in abnormal pregnancy. Its complete absence is nearly always evidence of serious abnormality, suggesting in early pregnancy the imminence of abortion and in late pregnancy the death of the foetus."—ED., *B.M.J.*

Closed Plaster Technique for Infected Fractures and War Wounds

SIR,—I must protest once more. We are failing to pay credit where credit is due. In the latest publication, *Surgery of Modern Warfare*, edited by Hamilton Bailey, are these words: "The closed plaster method was developed from Böhler's technique by surgeons engaged in the Spanish war, particularly Trueta. . . . It must be considered to be still on trial."

Nothing could be further from the truth. Trueta did not develop the technique. Böhler abhors it. It is the Winnett-Orr technique. It was developed in the last war, a quarter of a century ago. The cases were fully documented in 1929. Some surgeons may not have heard of it until the Winnett-Orr method was used in Spain, but if so they have only themselves to blame. During the last six years the British Medical Association has been circulating a film which illustrates every detail. Most orthopaedic surgeons in this country have used it routinely for over ten years.—I am, etc.,

Liverpool, Nov. 1. R. WATSON-JONES.

The Services

ROYAL AIR FORCE AWARD

The Military Cross has been awarded to Flying Officer Courtney Beresford Ingor Willey, R.A.F.M.S.

Flying Officer Willey was buried in the debris of a building which received a direct hit during an intensive air raid on an aerodrome. In spite of slight injuries and shock this medical officer immediately rendered first aid to other injured personnel.

NAVAL COMPASSIONATE FUND

At the quarterly meeting of the directors of the Naval Medical Compassionate Fund, held on October 29, with Surgeon Vice-Admiral Sir Percival Nicholls, K.C.B., K.H.P., in the chair, the sum of £154 was distributed among the several applicants.

CASUALTIES IN THE MEDICAL SERVICES

ROYAL NAVY

The name of Probationary Temporary Surgeon Lieut. ARTHUR GRIFFIN BELLAMY, R.N.V.R., is included as "Killed" in an Admiralty casualty list published on November 4. Dr. Bellamy was educated at the University of Cambridge and St. Thomas's Hospital, and qualified M.R.C.S., L.R.C.P. in 1936. He then took the degrees of M.B., B.Ch. in 1937. He had held the post of senior resident medical officer at the Royal National Hospital for Consumption, Ventnor, and at the outbreak of the war was residing in London. He joined the British Medical Association in April, 1938.

ARMY MEDICAL SERVICES

Prisoner of War

Colonel William Albert Robertson, C.B.E., M.C., A.M.S.

ROYAL ARMY MEDICAL CORPS

Prisoners of War

Major John George Lawson, R.A.M.C.

Captain (War Substantive) Norman Rupert Chamberlain Lansdell, R.A.M.C.

Lieutenant Samuel Thomas Williamson, R.A.M.C.

DEATHS IN THE SERVICES

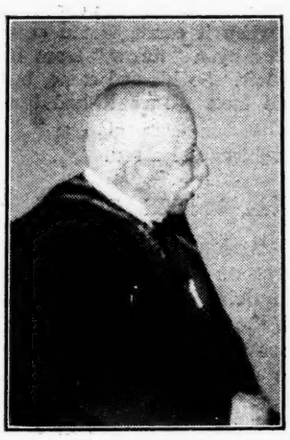
Lieut.-Colonel RICHARD CRUMP LEWIS, R.A.M.C. (ret.), died at Salcombe on October 23, aged 75. He was born at Kinsale, Co. Cork, on April 15, 1865, the youngest son of the late Mr. Stephen Lewis, was educated at the Carmichael School, Dublin, and took the diplomas of the Irish Colleges in 1888. Entering the Army as surgeon in 1892, he became lieutenant-colonel in 1915 and retired in 1919. He served in the North-West Frontier campaign in India in 1897–8 (medal with clasp); in the South African War in 1902, in operations in Cape Colony (Queen's medal with two clasps); and in the war of 1914–18. He had been a member of the British Medical Association for twenty-two years.

Obituary

W. G. SPENCER, O.B.E., M.S., F.R.C.S.

Consulting Surgeon and Vice-President, Westminster Hospital

Mr. W. G. Spencer died in the hospital on October 29 at the age of 82. Walter George Spencer was the son of Mr. Walter Spencer of Little Chatfield, Wiltshire. He was educated at Weymouth College and then became a student at St. Bartholomew's Hospital, where he gained the Junior and the Senior Scholarships, and in 1885 the Lawrence scholarship and gold medal. He qualified M.R.C.S. in 1885, and took the London M.B., B.S. in 1886. In 1887 he graduated as Master of Surgery in London University and in the same year was elected a Fellow of the Royal College of Surgeons of England. He was appointed house-surgeon at St. Bartholomew's Hospital and then did some research work under Sir Victor Horsley at the Brown Institute, publishing papers entitled: "The Effect produced upon Respiration by Faradic Excitation of the Cerebrum in the Monkey, Dog, Cat, and Rabbit" (*Phil. Trans. roy. Soc.*, 1894), and "On the Changes produced in the Circulation and Respiration by Increase of the Intracranial Pressure or Tension" (*Phil. Trans. roy. Soc.*, 1891). Spencer was elected assistant surgeon to Westminster Hospital in 1887, surgeon in 1897, and consulting surgeon and vice-president of the hospital in 1923.



He became a Member of the Senate of the London University, Member of the Council and Court of Examiners and Vice-President of the Royal College of Surgeons, and examiner in surgery at the Universities of London and Manchester. He was the Erasmus Wilson Lecturer in 1897 ("Pathology of the Lymphadenoid Structure"), the Vicary and Bradshaw Lecturer in 1922 ("Vesalius, his Delineation of the Framework of the Human Body in the *Fabrica* and *Epitome*"), and Hunterian Professor in 1920 (three lectures on animal experiments and surgery). His energy and wide knowledge were displayed in Spencer's *Outlines of Practical Surgery*, which he wrote in 1898. In 1910 he collaborated with Prof. Gask in producing a textbook of surgery which has had a wide circulation. For many years he worked in close association with Sir Henry Butlin, and in 1900 edited the second edition of Butlin's *Diseases of the Tongue*. With Stanford Cade he edited the third edition of this enlarged book in 1931. During the last war, as Major R.A.M.C.(T.), he was surgeon to the 4th London General Hospital. For these services he received the O.B.E. On his retirement from the hospital he devoted a large part of his time to work in the library of the Royal Society of Medicine, and there his untiring energy and extensive acquaintance with the literature of medicine and surgery were most valuable, and the Society will ever be grateful to him for the fine work he accomplished there. He also served as Honorary Librarian to the B.M.A. Library from 1922 to 1928.

Spencer came to Westminster just when surgery was making the great leap forward. With a mind well stored with the latest knowledge and the dexterity to use it he (with Charles Stonham) soon brought the surgical work of the hospital up to the level of its medical reputation; for we had an outstanding team of physicians—Octavius Sturges, Sir William Allchin, Sir Brian Donkin, de Haviland Hall, and Murrell.

Spencer had a wide clinical experience, an extensive acquaintance with surgical literature, and a retentive memory; and these were always and most willingly at the disposal of his colleagues. An able surgeon and a courageous one, he was prepared for any emergency and instantly met any unexpected condition with a quiet assurance and the appropriate treatment; no operation in any field of surgery was outside his realm.

Spencer was a sturdy English yeoman. His relaxations were walking and shooting, and he generally walked from Portland Place to Westminster Hospital. Many a time I have seen him walking down Parliament Street carrying a heavy microscope in its case on his way to the medical school in Caxton Street in the days when he lectured on physiology. He was a strong man and seemed to be tireless. One day, passing through the hall of the hospital, I saw him sitting in a wheel-chair—pale and rather collapsed; he had been brought in from Broad Sanctuary, where he had fallen on the road. He said to me, "I have fractured my patella; take me to the theatre and open up my knee-joint. Wash it out with 1 in 20 carbolic and suture my patella with silver wire." I took him to the theatre and found he had completely torn the quadriceps extensor at its insertion into the patella and its lateral expansions. This was sewn up (without washing out the joint with carbolic lotion) and the patient put into a bed. In the early evening I was called to the ward, where Spencer was insisting on being allowed to go home. This I would not permit—but I had to send for Mrs. Spencer to sit with him and prevent his disobeying orders. The next morning he went home, and when, the same day, I called to see him in Portland Place I found an instrument-maker there measuring him for a knee-splint; as soon as this was fitted he went on with his work.

I never heard Spencer say an unkind word of anyone. He was a friend to all who worked in the hospital—porters, students, nurses, and colleagues. Throughout the hospital, through all the years, he was regarded with a very real affection. He loved the old hospital, and his knowledge of its history and of the surrounding Westminster was unique. He wrote its history from 1719 to 1923 in a series of articles in the *Westminster Hospital Gazette* (since published separately as *Westminster Hospital: An Outline of its History*). He was a constant attendant at the board meetings, and served on many of its sub-committees.

Spencer married Miss Elizabeth Chorlton, a sister at St. Bartholomew's Hospital, and through a long married life they were devoted to each other. They had two children, a son and a daughter. Their daughter died whilst holding a resident appointment at Charing Cross Hospital.

ARTHUR EVANS.

Wing-Commander STANFORD CADE writes:

The great qualities of Walter G. Spencer were surgical courage, fearlessness in committee, and relentless energy in the pursuit of knowledge. As a teacher he lacked the gift of clear exposition, but his orderly mind, a wealth of experience, and a remarkable memory attracted students, residents, and colleagues, by whom he was affectionately known as "Pa" Spencer. As an operator he was swift, daring, indifferent to brilliance of execution, and, above all, safe. Throughout his long association with Westminster Hospital he remained an indefatigable worker, and the thick bound volumes of clinical notes imprinted with his name and extending over a period of nearly forty years bear witness both to the magnitude of his labours and to the quality of his work.

Great diagnostic ability, sound surgical judgment, and complete confidence in his own surgical competence enabled him to undertake every kind of surgical operation, so that even a quarter of a century ago gastrectomies, intracranial tumours, and hind-quarter amputations were to be found not infrequently in his wards. Although Spencer's early association with Sir Henry Butlin gave him the skill and opportunity to practise extensive operations for cancer of the mouth and jaws, he saw with great interest the advent of radiation therapy and expressed the wish to edit a third edition of Butlin's *Diseases of the Tongue*, so that the more modern methods could be incorporated in the book. His hobby was the study of the history of medicine, and after his retirement from the active staff he spent much time in completing the history of Westminster Hospital. His passing closes a chapter in its history. He played his part well, added lustre to the hospital's reputation, and by his personality, honesty of purpose, and character will remain to those who knew him an example and an inspiration.

"One of his old Students" writes:

By the death of Mr. Walter Spencer scores of old Westminster men will feel the loss of a great teacher, a brilliant surgeon, and, to those who served under him, a real friend. "Pa" Spencer, as he was affectionately called by everyone at Westminster, was indeed a real father to all who came in contact with him. From the first day that a young dresser became attached to his "firm" he followed that man's career with increasing interest, and nothing gave him greater pleasure than a call from one of his "old boys" during the years of his retirement. Many old yarns would be retold and many cases recalled. Perhaps his greatest ability was shown in his unerring accuracy in diagnosis, whilst his operative work, though perhaps somewhat "drastic," was nevertheless equally successful.

The "Historian of Westminster" has passed over, but the future historian will doubtless find a niche for the name of the much-beloved Walter Spencer.

[The photograph reproduced is by Wide World Photos, London.]

JEFFREY RAMSAY, O.B.E., M.D., F.R.C.P.

Honorary Physician, Blackburn Royal Infirmary

We regret to record the death on October 25 of Dr. Jeffrey Ramsay, who was honorary physician and honorary pathologist to the Blackburn Royal Infirmary. Dr. Ramsay received his medical education at St. Bartholomew's Hospital; he took the Conjoint qualification and the M.B. B.S.London in 1907. He proceeded to the M.D.London in 1909 and in 1925 took the M.R.C.P., being elected to the Fellowship in 1937. After qualification Dr. Ramsay held the post of senior house-surgeon at the hospital to which he later became honorary physician. In the last war he was physician specialist to No. 64 C.C.S. and was twice mentioned in dispatches. Among his publications were papers in this *Journal* and the *Lancet*. He was a member of the Blackburn Education Committee and Chairman of the Blackburn Division of the B.M.A. in 1926–7. We are indebted to his colleague, Mr. W. Briggs, for the following appreciation:

The sudden death of Dr. Jeffrey Ramsay has brought a grievous loss to the medical services of Blackburn and the surrounding district. The Blackburn and East Lancashire Royal Infirmary has lost its senior honorary physician and pathologist and the only F.R.C.P. it has ever had on its staff; the sick of the area have lost a great-hearted doctor who gave them his skill and energy unsparingly; and his colleagues have lost one who was always helpful, inspiring, and loyal.

I enjoyed his friendship for over a quarter of a century, the years of 1915–18 being the richest in memories, when Ramsay was physician specialist and I was surgical specialist at No. 64 Casualty Clearing Station; his fine qualities made co-operation with him both helpful and delightful. During these trying years—as indeed during his whole professional life—he was always intent on some form of investigation or research. We had not been long in France before he "wangled" a tiny canvas hut from an unsuspecting quartermaster and soon had a small pathological laboratory fitted up; he spent all his spare time working there. His excellent work in 1917, when the first cases of mustard-gas poisoning appeared in our area, resulted in advances in treatment which brought marked alleviation of the dreadful suffering of these patients work which was recognized by a "mention in dispatches." He was appointed medical officer to Army Headquarters with the Army of the Rhine in 1918, received a second "mention" in June, 1919, and was gazetted as Officer of the Military Division of the Order of the British Empire. On his return to the Royal Infirmary he founded a pathological department and continued as its honorary pathologist up to the time of his death. The "blood picture" always interested him, and the theories he could frame around a haemogram were always interesting, though perhaps at times a little fanciful to the duller surgical mind. He retained his interest in the R.A.M.C. for many years after the last war and held the rank of lieutenant-colonel in the Territorial Reserve.

Ramsay gave much public service to the town, for eight years was a University representative on the Blackburn Education Committee, and for a long period served on the Council of the District Nursing Association. He was a fine public speaker—whether prepared or unprepared—with a most engaging sense of humour. I have heard him described by a barrister of long experience as one of the best medical witnesses he had ever examined. After the outbreak of war in 1939 he was appointed medical director of the local Emergency Medical Service Hospitals. Only the week before his death he had taken on the duties of blood transfusion service officer for this region, and was full of enthusiasm for the work. But it was not to be. On Wednesday, October 23, he was working as usual, and saw a case with me in my wards; on Friday evening, October 25, he died peacefully in his chair. He had often said he hoped death, when it came, would come to him in one of two ways—either by a "throw" from his horse or a sudden attack in his chair. So his end came, but, with our limited vision, we could have wished it had been delayed a while.

He leaves a widow and two daughters and a son.

N. F. C. BURGESS, M.A., M.D., M.R.C.P.

We regret to record the death on October 18 of Norman Francis Clifford Burgess, lecturer on skin diseases in the University of Bristol, and physician in charge of the skin and light departments of the Bristol General Hospital. Dr. Burgess was educated at Clifton College, gained an exhibition to Caius College, Cambridge, and subsequently went to Guy's with an open senior science scholarship. He took the Conjoint qualifications in 1924, the M.B., B.Ch. and M.R.C.P. in 1926, and proceeded to the Cambridge M.D. in 1929. At Guy's he was a Poulton research student and Arthur Durham travelling student. In 1931 he was given a B.M.A. research scholarship. He published several papers on his specialty in this *Journal*.

A colleague writes:

Death has removed at the early age of 38 a peculiarly lovable and hard-working colleague of considerable ability and an energy which proved too great for his physical strength. He studied dermatology in Paris, Vienna, and Philadelphia. On returning to his native city of Bristol he was appointed chief surgeon to the Bristol Constabulary, in succession to the late Mr. Paul Bush, but resigned this in 1936. In 1929 he acted as clinical assistant in the skin department of the Bristol General Hospital, and in 1932 succeeded Dr. Kenneth Wills as physician in charge of the skin and light departments at that hospital. Burgess joined the medical staffs of the Southmead, Cossham, and Homoeopathic Hospitals, and acted as dermatologist to the Albert Dock Hospital, London.

He was vice-president of the Section of Dermatology at the Annual Meeting of the British Medical Association at Oxford in 1936, and was a member of the British Association of Dermatology and Syphilology.

Keenly alive to all recent developments in dermatology, he lost no opportunity of putting them to the test and publishing his results, as his numerous papers testify. He did valuable

work on calcium metabolism, proteose injections, autohaemotherapy, gold treatment, and phenylethyl hydnocarpate for lupus vulgaris; at the time of his last illness he was preparing a paper on autosensitization and, with his junior colleague Dr. Catherine Maclaren, some work on eczema. Burgess was an officer of the Order of St. John, and, not content with his dermatological work, he interested himself in the St. John Ambulance Brigade, and became corps surgeon in 1929; he was appointed county commissioner in 1937; his wife, too, was lady county commissioner in the same Brigade. For nineteen years he served in the Territorial Forces, and became major R.A.M.C. (T.A.); on the outbreak of war he became senior M.O. 46th Brigade (A.A.), but was invalided out after a period of service.

His physical strength proved inadequate to the strain he placed upon himself, and he had to spend some time at Davos. His recovery seemed to be complete, but his health broke down again. He leaves a widow and three children.

ERNEST HUGH SNELL, M.D., D.P.H.

It is with deep regret that we have to announce the death through enemy action of Dr. E. H. Snell, Barrister-at-Law, of Middle Temple, formerly Medical Officer of Health for Coventry, and a member of council of the British Medical Association for many years until his death and one of the Association's most loyal supporters.

Ernest Hugh Snell, who was educated at Queen's and Mason Colleges, Birmingham, and King's College, London, qualified M.R.C.S., L.R.C.P. in 1889 and in the same year took his M.B.London with honours in medicine and forensic medicine. Two years later he obtained his M.D., and in 1893 the D.P.H. of Cambridge. His early appointments included those of assistant medical superintendent, Paddington Infirmary, and house-physician and ophthalmic and obstetric house-surgeon, Queen's Hospital, Birmingham. In 1897 he was appointed medical officer of health to the city of Coventry, a post from which he retired in January, 1930. From 1905 he was also school medical officer for that city. To many members of the profession, however, Dr. Snell will be best known for his unstinted efforts on behalf of local and central work of the British Medical Association. He was first elected to the Council in 1927 and was continuously a member from 1932. He was a representative in the Representative Body for varying periods between 1917 and 1936. But it is for his advice and help on medico-legal and public health matters, on which he was particularly able to speak by reason of his legal training and his years of public health service, that the Association is most indebted to Snell. He served on the Public Health Committee in 1919 and again from 1932 until his death, and on the Medico-Political Committee continuously from 1934. He was also a member of several medico-legal subcommittees, and also of the Conference of Representatives of the Association and the Society of Medical Officers of Health. For the year 1929–30 he was President of the Birmingham Branch of the Association.

H. G. W. writes:

My own close association with Snell goes back for twenty-five years, and has been mostly concerned with the public health side of his activities. It may be truly said that as a medical officer of health Snell was individual. He had his own ideas, well reasoned out, often differing from his colleagues in his interpretation and administration of the various Public Health and Housing Acts and Regulations which have been so numerous during past years. None the less it was always fruitful to discuss with him the various problems arising; one could be sure of a well-considered opinion, which in the outcome was usually correct. The individual outlook is not always popular with local authorities. Snell was too independent in his outlook, and refused to utilize methods of obtaining advancement which, though usual, were distasteful to him.

A very marked sense of humour, somewhat puckish at times but never unkind, remains an abiding memory. As president of the Society of Medical Officers of Health some years ago, Snell's speech at the annual dinner was, to my mind, a model of what such speeches should be: sound common sense, vision, sly but kindly digs at the powers that be and his colleagues in the service, and a humorous résumé of the history of the Society delighted those present, and it was hard to believe that he was as nervous as, in fact, he assured me he was.

Snell's life was a full and happy one. His work, his holidays, both at home and abroad, and his activities in connexion with the British Medical Association and the Society of Medical Officers of Health were a constant source of interest to him. Many of his colleagues will have pleasant memories of the cheerful personality of Mrs. Snell; she died about two years ago, and it was obvious to those who knew him best that he missed her sadly. It is difficult to realize that we shall not again see that characteristic stance, the sideways glance, the slow smile and twinkling eye of Ernest Hugh Snell, and that the visits to his study, few of late, will no longer be possible. A real friend has passed on, and we shall not see his like again.

Dr. WALTER GREGOR of Coventry writes:

By Dr. Snell's death Coventry has lost her most-respected and most-loved doctor. For some thirty years he was medical officer of health for this city, and he lived to see many of his schemes of reform brought to fruition. I want, however, to speak more of his work for the general practitioner. He was chairman and then secretary of the local Division of the B.M.A., and he never ceased to toil in the interests of the panel doctor. His work was suitably recognized by a presentation to him some years ago. He never attended meetings simply because he was a member of committee. Always he had studied the agenda, weighed the pros and cons of any decision likely to be arrived at, and rarely if ever was a decision made without the full sanction and approval of Dr. Snell. He was indeed guide, counsellor, and friend to this Division, and when we resume our meetings we shall miss his advice and direction more than we at present realize.

He was a brilliant and entertaining after-dinner speaker. At Masonic functions, which he dearly loved, the toast of "The Visitors" was Dr. Snell's as if by royal decree, and many a happy evening do I remember listening to his mock-serious, quizzical speeches. The death of his wife was a sad blow to him. I do not think he ever really recovered from it. Moreover, his own health began to fail. War came, suspending all his meetings of Division, Branch, and Council. This struck hard at one who revelled in the atmosphere of the committee room. He was never, however, disconsolate. He put a bright face on all his misfortunes. He had run his race, and it can be said in all truth of Dr. Snell that he was not afraid "to greet the unseen with a cheer."

KATE ANNE PLATT, M.D.

We regret to record the death of Dr. Kate Platt, late Principal and Professor of Medicine of the Lady Hardinge Medical College at Delhi. Dr. Platt was educated at the London School of Medicine for Women, qualified M.B., B.S. in 1904, and took the M.D.Lond. in 1915. She received the Kaisar-i-Hind medal in recognition of her work in India.

A colleague writes:

The tragic death of Dr. Kate Platt during an air raid in London will cause deep and heartfelt sorrow not only among her friends in England but among colleagues, students, patients, and friends with whom she was connected during her strenuous years of work in India.

Dr. Platt came to India in 1907, and was for some time in charge of the Dufferin Hospital, Calcutta. In 1913 she was chosen as the Principal Designate of the proposed Lady Hardinge Medical College, started by Lady Hardinge, wife of the then Viceroy. The College was opened in 1916 and the hospital shortly after. In the intervening years after her first appointment Dr. Platt travelled extensively throughout

India, studying the principles of Indian education and visiting the different universities and colleges. She was in close touch with the building committee and with the architect of the college, and watched the buildings grow up, securing changes and improvements to suit the needs of the women students and their training in science and medicine. During this time also she acted as adviser to the Countess of Dufferin's Fund, which had recently inaugurated the Women's Medical Service for India and in connexion with which her advice was invaluable. She searched for and engaged the staff for the college, and found time in 1915 to visit London, where she gained the M.D. with first-class honours in medicine. The first session of the college opened in October, 1916, and the hospital was opened soon after. Patients came in abundance. Women students soon filled the hostels, and as they began to appear for the examinations of the Punjab University they attained a high degree of success. There were, of course, difficulties due to the mixture of races and communities living together—students, nurses, patients, and staff. It is not too much to say that it was the wise guidance and the breadth of sympathy of the principal which steered the institution safely through these first years. The special purpose for which this medical college for women, staffed by women, had been initiated was to enable Indian women of the more secluded classes to train in medicine. In the twenty-four years which have passed this purpose has been well realized, and as a result many Indian women graduates are practising in all parts of India.

In 1921 Dr. Platt was obliged to resign for reasons of ill-health, and her loss was greatly felt by all. Later she took up many activities in England, but she never lost her love of India and especially her love of her old college, with which she kept in close touch. After her retirement she continued practice in London, and was connected with many social and medical organizations. She was for many years a member of the United Kingdom Dufferin Committee, and was medical adviser to Lady Minto's Indian Nursing Association. She was an authority on medical work for women in India, and especially on medical education, and was always ready to help and advise others.

We regret to announce the death on October 18 at Stert, near Devizes, of Dr. ROBERT CYRIL TURNBULL, late medical superintendent of the Essex and Colchester County Mental Hospital, at Severalls, Colchester, aged 63. A student of the London Hospital, where he was later house-physician, Dr. Turnbull qualified M.R.C.S., L.R.C.P. in 1900 and took the M.D. degree of London University in 1908. He began his work in mental disease as assistant medical officer at the Horton Mental Hospital, Epsom, and was later senior assistant medical officer at the Essex County Mental Hospital, Brentwood, before his appointment as head of the Institution at Severalls, from which he retired in March, 1939. He was a member of the Royal Medico-Psychological Association and joined the British Medical Association in 1916, becoming chairman of the North-East Essex Division in 1936.

Corrigendum

On page 577 of the *Journal* of October 26 in the list of deaths of foreign medical men, "HAROLD DOUGLAS, surgeon," should read "HAROLD DOUGLAS SINGER."

The *Proceedings of the Cardiff Medical Society* for the session 1939-40 have recently been published. An interesting presidential address on "The Eighteenth Century and Some of its Doctors," by Professor Gilbert Strachan, is followed by a discussion on wartime surgery, opened by Mr. A. W. Sheen and Mr. J. Berry Haycraft. Other papers in this issue include one on regional pathology in wartime by Professor J. B. Duguid, on diabetes mellitus by Professor H. P. Himsworth, on wartime nutrition by Professor H. V. Mottram, and on the termination of early pregnancy by Professor Strachan. In an article entitled "Strange to Relate" Professor Miles Phillips contributes an interesting essay on his hobby—the collecting of old books on midwifery.

Medico-Legal

INFANTICIDE

At Cambridge Assizes on October 16 before Mr. Justice Singleton, Florence Mabel Howard of Whittlesey was charged with having wilfully caused the death of her newly born child, "she at the time of the act not having then fully recovered from the effect of childbirth, by reason thereof the balance of her mind was disturbed." The evidence for the prosecution was that the woman in the middle of the night gave birth to a child (which according to her story was not alive because it did not cry), and placed it in a chamber utensil with some of the afterbirth, and in the morning emptied the contents of the utensil into the lavatory, from which the body was recovered by the police. Dr. J. R. F. Popplewell of Whittlesey stated that on examining the child he found that it weighed about seven pounds and was well nourished. There was nothing in the larynx or trachea to obstruct breathing. The thyroid gland showed a few small points where blood had been forced out underneath the surface, indicating asphyxiation. The veins of the neck were full of dark blood. The lungs, which did not fill completely the cavity of the thorax, were bright red in colour, and there were a few scattered haemorrhages on the surface. The lungs also floated when placed in water. He believed death to have been due to asphyxiation. In cross-examination he said that the cord need not necessarily be severed for the child to have a separate existence. The child could breathe with the cord still attached to the mother.

In summing up his lordship referred to previous decisions on the question of separate existence. It had been held that it must be proved that the entire child had actually been born into the world in the living state, and that the fact of its having breathed was not a conclusive proof thereof. The child might during the actual time of just coming away from the mother breathe and then breathe no more. There must be an indcpendent circulation in the child before it could be considered as alive, without deriving its power of living by or through any connexion with the mother. But it had also been held that the fact of the child being still connected with the mother by the umbilical cord would not prevent the killing from being murder. It might be taken (said his lordship) that the fact that the child breathed was not a conclusive proof of separate existence, but it went some way, and while doctors were not infallible they did their best, so that he was inclined to think that Dr. Popplewell, who had taken great care in the investigation, was correct in his judgment when he said the child died of asphyxiation. If the jury was not satisfied that the child had a separate existence it must acquit the woman of the charge of infanticide.

The jury acquitted the woman of infanticide, but found her guilty of concealment of birth, and by the judge's order she was placed under care.

In another case in which a woman was charged with the wilful murder of her infant sixteen days after its birth the evidence showed that at the time she left the maternity home just before the murder (by drowning) she had recovered from the effects of pregnancy and confinement. The medical officer attached to Holloway Prison, Dr. M. M. Rougvie, stated, however, that when the woman was admitted to Holloway some six weeks after the alleged crime she was still suffering from haemorrhage and the uterus had not contracted down normally. In reply to the judge Dr. Rougvie said that he believed her condition at about the time the act was committed was consistent with the balance of her mind being disturbed.

In his summing-up the judge paid a tribute to the prison medical service. When a person was taken to prison on a serious charge he or she was examined, watched, and attended by most experienced doctors, and was often restored to health as a result of their care. As good medical attention was obtainable in prison as anywhere in the country. He attached great importance to the prison doctor's evidence that there

remained a degree of mental instability associated with the confinement.

The jury found the woman not guilty of murder but guilty of infanticide, and she was placed in the care of the probation officer.

EMPLOYMENT OF ALIEN DOCTORS AND NURSES IN HOSPITALS

The Minister of Health, Mr. Malcolm MacDonald, after consulting the other Departments concerned, has issued a circular to hospital authorities withdrawing to a large extent the limitations made earlier in the year on the employment of refugees of German and Austrian nationality in hospitals or similar institutions included in the Emergency Hospital Scheme in areas in England and Wales outside the Protected Areas. In these non-protected areas persons of German, Austrian, and Italian nationality may be employed as doctors (qualified to practise in this country), medical students, nurses, or in other capacities, subject to the following conditions:

(*a*) In the event of invasion or other serious military situation which would make it necessary for the military authorities to take full control of the area, the military authorities may find it necessary to order the immediate removal from the hospital of the persons in question.

(*b*) Every effort should be made to segregate Service patients in separate wards, and the aliens must not be employed in wards set aside for this purpose.

(*c*) Wherever practicable alien doctors and nurses should be employed only in wards where British doctors and nurses are also engaged.

(*d*) The number of aliens of enemy nationality who may be employed in a hospital must be limited in relation to the total staff. For this purpose account should be taken of the following categories of staff: doctors, nurses (including massage staff), other professional and technical workers (including laboratory and research staff), students and domestic staff (including voluntary workers such as stretcher-bearers). Within any of these categories not more than 10% of the personnel (or 20% in the case of hospitals of less than 100 beds) may be aliens of enemy nationality.

Permits from the Aliens' War Service Department will be required before an alien can be employed, but these are not likely to be refused unless it is found that there is reason to think that the applicant might be a danger to national security. Alien nurses will no longer have to obtain Ministry of Labour or Home Office sanction in addition to this permit.

The circular states that existing limitations will continue to apply in all Protected Areas.

REGIONALIZATION OF SCOTTISH HOSPITALS

An advisory committee on the Regionalization of Hospital Services in Scotland in association with the Nuffield Provincial Hospitals Trust has now been set up with Mr. Thomas Johnston, Regional Commissioner for Scotland, who is also Scottish Trustee for the Trust, as chairman of the committee. A subcommittee to advise upon medical services has been appointed and includes Sir John Fraser (chairman); Prof. J. R. Learmonth, Edinburgh; Prof. Noah Morris, Glasgow; Prof. C. F. W. Illingworth, Glasgow; Prof. Charles McNeil, Edinburgh; Prof. James Hendry, Glasgow; Prof. Adam Patrick, Dundee; Dr. J. Crawford Knox, Aberdeen; Dr. W. G. Clark, medical officer of health, Edinburgh; Prof. J. M. Mackintosh, Glasgow; Dr. A. Greig Anderson, Aberdeen; Dr. Duncan Leys, Inverness; Dr. R. W. Craig, Scottish Secretary, British Medical Association; and Dr. A. S. M. Macgregor, medical officer of health, Glasgow.

Universities and Colleges

UNIVERSITY OF WALES

WELSH NATIONAL SCHOOL OF MEDICINE

The following candidates for the degrees of M.B., B.Ch. have satisfied the examiners at the examination indicated:

A. A. Edwards, *N. E. France, Vera Harris, A. B. J. Hill, Margaret W. Hughes, D. F. V. Johnston, W. M. Jones, Gwenllian M. Lewis, J. Lewis, J. W. Morgan, Monica Parry-Morton, D. K. W. Picken, J. B. Randell, *H. I. Rees, Nest G. Richards, Barbara C. Roberts, Erica M. G. H. Roberts, E. Spickett, J. H. Stranger, E. R. Treasure, J. Williams, O. Williams, G. A. Wright.

* With distinction.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At the quarterly comitia of the Royal College of Physicians of London, held on October 31, with the President, Sir Robert Hutchison, in the chair, Dr. H. MacCormac, Dr. Hope Gosse, Dr. R. A. Rowlands, and Dr. R. Coope were elected Councillors.

Dr. A. Clark-Kennedy was elected representative of the College on the committee of management of the Conjoint Board.

The President announced the award of the Jenks Memorial Scholarship to Gerald Rees Davies, late of Epsom College, and the appointment of Dr. W. N. Pickles as Milroy Lecturer for 1942.

Dr. Isaac Muende, M.B.Lond., was elected a Member.

Licences

Licences to practise were conferred upon the following 182 candidates (including twenty-three women) who have passed the final examination of the Conjoint Board and have complied with the necessary by-laws:

R. H. Alexander, Sugra M. Ali, W. H. E. Allen, J. L. B. Ansell, O. B. Appleyard, D. J. Ap Simon, W. D. Arthur, P. A. Bachmann, C. F. Ballard, P. S. Barclay, R. C. Barclay, A. Barlow, E. D. Barlow, K. L. Barnes, R. Bauer, G. W. Bellis, F. D. Birks, R. Boggon, J. F. Bourdillon, Ruth E. M. Bowden, P. T. Boyle, J. B. Braithwaite, B. D. Burns, J. S. G. A. Burns, W. Calvert, A. H. Campbell, E. C. R. Campbell, W. R. Clarke, D. P. Cocks, P. W. S. Coghill, L. B. Cohen, R. H. L. Cohen, M. J. Conlon, O. L. C. Cookson, G. O. Cowdy, A. S. Craner, Leonora A. Crawford, Barbara M. Crook, Muriel Crouch, T. Culloty, D. Dangerfield, H. M. Darlow J. O'C. Davies, Grace T. Dawson, W. G. Daynes, H. E. H. Denham, R. V. Dent, G. Discombe, P. C. Dismorr, D. M. L. Doran, R. E. Dunn, J. G. Eadie, T. E. C. Early, A. H. A. El-Baghdadi, J. Faiq, A. G. Farr, J. B. Fawcitt, M. A. Fawkes, J. M. Ferguson, J. R. Fletcher, D. C. Fraser, D. N. Fuller, L. Garrett, B. Godwin, H. Greenberg, S. Gruber, J. P. Guthrie, K. A. Hall, R. S. B. Hamilton, F. W. Hanford, G. I. Harding, J. S. Hesketh, C. R. F. Hewlett, Dorothy M. Hicks, R. T. Hinde, H. D. R. Hine, G. S. Hopkins, E. V. Hope, G. Houseman, W. G. J. Hughes, S. O. Hunt, A. D. Husband, D. MacG. Jackson, F. S. Jackson, Muriel E. James, B. D. L. Johnson, Grace A. Johnson, F. T. Jones, J. G. Jones, P. E. H. Jones, M. Kamill, J. G. Koopman, G. Krafft, D. Laing, P. W. W. Leach, Cynthia Lee, J. B. Lee-Woolf, Flora Levy, D. Lewis, T. D. C. Lewis, M. Lipsitz, G. B. Locke, W. J. C. Lord, R. E. McLachlan, A. Maconochie, J. M. Malins, A. Maples, W. W. Marsden, D. V. Martin, D. H. Meldrum, S. P. Millar, R. P. Mills, D. T. Milnes, S. N. Mohan, E. H. Moorhouse, J. E. Morgan, P. S. Norris, Ruth P. Peterson, H. T. Phillips, Florence R. Pillman, G. W. Pinder, J. M. Piney, J. F. Poolman, D. S. Porter, M. Rathnavelu, M. A. Rauf, A. H. Rea, L. Read, R. D. S. Rhys-Lewis, J. Ribeiro, B. G. Rigden, P. A. L. Roberts, G. McC. Robson, J. W. Rogerson, Joan A. Rosmarin, C. M. H. Rotman, T. W. Rowntree, C. A. Royde, R. S. Russell-Smith, Mary M. E. Rutter, Kate E. Rymer, J. E. Ryner, J. Salwey, A. R. Sandford, C. A. Sandle, C. F. Saunders, N. Saunders, E. Shephard, H. Shloimovitz, A. R. Silcock, Margaret C. Smith, P. Smith, A. J. H. Spafford, Kathleen Staynes, J. M. Steinberg, J. Stuppel, Myra Sutherland, N. Swallow, J. F. Swan, P. H. Tasker, D. M. E. Thomas, D. T. Thomas, E. G. Thomas, H. A. Thomas, Beatrice M. Thompson, W. Thomson, A. Toorawa, N. C. B. Trapps, P. D. Trevor-Roper, R. Wadia, Violet E. Waller, Mary J. Walmsley, P. Waters, W. F. J. Weston, C. Ll. Wharton, H. W. Wheate, M. W. L. White, J. H. Wildman, Mary U. Wilkin, J. M. Williams, T. N. P. Wilton, J. Woodley.

Diplomas

The following diplomas were conferred, jointly with the Royal College of Surgeons of England, upon the following candidates:

DIPLOMA IN CHILD HEALTH.—A. J. W. Beard, J. Fiddes, A. N. Ganguli, M. J. Parsonage, Cicely Steer, J. Thomson.

DIPLOMA IN PUBLIC HEALTH.— S. D. Arya, B. C. Barua, Mary T. Day, J. M. Gray, I. Kitchlew, M. W. A. Quraishi.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

The eleventh annual report of the Royal College of Obstetricians and Gynaecologists states that during 1939 fifty-six new members were admitted and fourteen members promoted to the Fellowship. An application for a Royal Charter was lodged with the Privy Council, but certain modifications were requested, two of which were unacceptable to the council of the College. On the outbreak of war, however, the Privy Council decided that no new charters should be considered. It is now learned that the objecting body has withdrawn its objections, so that it is hoped that when the consideration of charters is resumed the grant may be made without delay. Several hospitals have been inspected by representatives of the College in continuation of the policy of recognizing hospitals suitable for training candidates for the examinations, but as the war has caused so much disorganization of hospital routine and dispersal of staffs, it has been decided that during the war no hospitals shall be added to the list of those already recognized. Nevertheless, applications will be considered from candidates who are working temporarily under the supervision of specialist teachers although in hospitals which may not be on the recognized list. The council appointed a subcommittee to report on the principles which should underlie the planning and organization of an ideal maternity hospital. The recent report of the Departmental Committee on the cost of hospitals contains a section on the planning of maternity hospitals and departments, and this with certain additional observations and modifications has, with the approval of the council, been adopted as representing the view of the College.

Financially the year 1939 was anticipated with some misgiving because for the first time the late Lord Riddell's gift of £1,475 a year, which was on a seven-year covenant expiring in 1938, was no longer forthcoming. The year has, however, ended with a small surplus of income over expenditure. In his address to the annual meeting of the College Prof. W. Fletcher Shaw (who was re-elected President in July, with Prof. Miles H. Phillips and Mr. Eardley Holland as Vice-Presidents) said that the finest testimonial to the work of the College and the position which it had achieved was the way in which the Fellows and Members had rallied to it. Many of them had been hard hit financially, and had had to curtail drastically their personal expenditure, but complaints about the annual subscription had been very few.

The annual report as circulated includes a register, from which it appears that the Fellows number 227, Members 430, and there is a list of 259 diplomates.

At a quarterly meeting of the council, held on October 26, with the President, Prof. W. Fletcher Shaw, in the chair, the following were admitted to the Membership of the College (*in absentia*):

A. F. Anderson, Edinburgh, J. O. E. Apthorp, Capetown, A. L. Deacon, London, W. T. Dingle, Canada, D. B. Fraser, London, G. S. Lester, Walsall, S. W. Liggett, London, R. Murdoch, R.A.M.C., F. J. P. O'Gorman, Sheffield, Coralie W. Rendle-Short, Bristol, I. E. J. Thomas, Tunbridge Wells, L. O. Watt, Canada, S. Way, Newcastle.

The examinations for the Membership and for the Diploma continue to be held, and the library and museum of the College are open daily except Saturdays.

Medical News

The Nutrition Panel of the Food Group of the Society of Chemical Industry is holding a meeting at B.M.A. House at 11 a.m. on Wednesday, November 13, to discuss "The Potato as Food." M. André Simon will be in the chair, and the three opening papers will be read by Dr. R. N. Salaman, F.R.S., on "The Biology of the Potato," the second by Dr. L. H. Lampitt and Mr. N. Goldenberg on "The Composition of the Potato," and the third by Dr. Harriette Chick on "The Nutritive Value of the Potato."

A meeting of the Pharmaceutical Society of Great Britain will be held at 17, Bloomsbury Square, W.C., on Thursday, November 14, at 2.30 p.m., when Prof. A. Fleming will give an address on "Antiseptics in Wartime Surgery."

Mr. T. S. S. Holmes has succeeded Dr. J. M. McCloy as president of the Ulster Medical Society.

The honorary fellowship of the Canadian Public Health Association has been conferred on Dr. E. W. Montgomery, emeritus professor in medicine, University of Manitoba, and formerly Minister of Health and Public Welfare of the Province of Manitoba, and on the Hon. J. M. Ulrich, M.D., Minister of Public Health and Provincial Secretary, Province of Saskatchewan.

Lady Mackenzie, widow of Sir Colin Mackenzie, F.R.C.S., who did much to ensure the preservation of wild life in Victoria, has been commissioned as a captain in the Australian Army Medical Corps Reserve.

The *South African Medical Journal* reports that Capetown's new tuberculosis clinic is rapidly nearing completion. The total cost will be about £14,000, the site costing £2,000, the building £900, and the equipment £3,000.

The *Journal of the American Medical Association* states that "medical pilots," a group in which membership is available to all white male American citizens who are licensed practitioners of medicine and members of their local medical society, were organized in Southern California last June.

The widow of Dr. Wallace C. Abbott, the founder of the Abbott Laboratory at Chicago, has presented the North-Western University and University of Chicago with 1½ and 1 million dollars respectively for medical research.

EPIDEMIOLOGICAL NOTES

Infectious Diseases for the Week

In England and Wales increases were recorded in the incidence of measles, whooping-cough, pneumonia, scarlet fever, and enteric fever; there was a fall in the notifications of cerebrospinal fever and acute poliomyelitis, and those for diphtheria and dysentery remained at approximately the same level. In each instance—with the exception of measles and whooping-cough, for which comparable data are not available for 1939—notifications (notably for cerebrospinal and enteric fevers) were at a higher level than during the corresponding week last year, and, with the exception of diphtheria, higher than in 1938. In Scotland, also, epidemic diseases appear to be spreading—whooping-cough and enteric fever excepted—and generally are more prevalent than in the immediately preceding two years.

Up to date available evidence does not warrant the attribution of the observed increases to unfavourable conditions arising from the war. It is more probable that we are now suffering for the unwonted immunity enjoyed generally last year—presumably from widespread dispersal of non-immunes at a period when infectious diseases normally tend to be rife. In the absence of such control as artificial immunization, infectious fevers recur on an epidemic scale with fairly constant characters, although the time and form of particular epidemics may be modified by external influences.

Attention has lately been focused on the continued prevalence of enteric fever. Damage to water services has not been accompanied by a noticeable increase, and, indeed, apart from the week under review there has been a tendency for notifications to decline. Nevertheless, in view of the risk involved individuals in bombed areas may consider immunization against enteric fevers a wise precaution to take. The observed distribution of the disease throughout England and Wales conforms more or less to that of normal times before the war—in many localities sporadic cases and in a few small outbreaks. At present twenty-two administrative areas record cases, but in only seven were more than 2 cases notified—namely, Yorks, West Riding, 19 (Leeds 9, Bradford 4, Barnsley 1, the urban districts of Baildon, Heckmondwike, Shipley, Swinton, and Wath-upon-Dearne, 1 each); Lancaster 12 (Manchester 5, Blackpool, Burnley, Liverpool, Rochdale, Aspull U.D., Prestwich M.B., and Lancaster R.D., 1 each); Salop 9 (Wellington R.D. 5, Oakengates U.D. 2, Dawley U.D., Drayton R.D., 1 each); Warwick 9 (Birmingham 5, Coventry 2, Royal Leamington Spa M.B., Stratford-on-Avon M.B., 1 each); Chester 3 (Chester 1, Wallasey 1, Neston U.D. 1); Durham 3 (Easington R.D. 2, Gateshead 1); London 3 (Hackney, St. Pancras, Wandsworth).

No. 40

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended October 5, 1940.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1940					1939 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	112	9	37	1	3	18	3	9	2	—
Deaths		2	1				—	1		
Diphtheria	1,163	61	395	31	22	952	25	223	29	28
Deaths	31	1	11	—	2	19	—	5	2	1
Dysentery	63	3	76	—	—	37	1	69	—	—
Deaths			—	—	—			1	—	—
Encephalitis lethargica, acute	5	—	—	—	—	2	—	—	—	—
Deaths		1	—				1	1		
Enteric (typhoid and paratyphoid) fever	77	3	4	2	4	39	5	3	3	4
Deaths	2	1	—	—	—	3	2	—	2	—
Erysipelas		29	48	3	4			57	8	4
Deaths		—	2				—	—		
Infective enteritis or diarrhoea under 2 years										
Deaths	44	8	16	9	5	28	5	23	8	12
Measles*	8,852	184	384		41			8		11
Deaths	12	—	1	—	—	1	—	—	—	1
Ophthalmia neonatorum	91	4	23	1	3	85	2	14	—	—
Deaths										
Pneumonia, influenzal†	651	50	6	2	—	379	24	7	—	6
Deaths (from influenza)	9	2	3	—	1	14	3	3	—	2
Pneumonia, primary			133	10				102	10	
Deaths‡				9	8		3		6	5
Polio-encephalitis, acute	2	—				2	—			
Deaths							—			
Poliomyelitis, acute	34	1	10	—	—	42	1	—	1	1
Deaths			—				—	—		
Puerperal fever	2	2	16	4	—	3	3	16	3	1
Deaths		—					1§			
Puerperal pyrexia	138	8	10		1	150	7	17		1
Deaths										
Relapsing fever	1	—			—	—	—			—
Deaths										
Scarlet fever	1,872	64	233	45	55	1,263	32	214	65	92
Deaths	2	—	1	—	—	1	—	—	—	—
Small-pox	—	—	—	—	—	—	—	—	—	—
Deaths		—	—	—	—		—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths			—	—	—			—	—	—
Whooping-cough*	1,332	15	75		5			17		4
Deaths	11	—	1	1	3	5	—	—	—	—
Deaths (0–1 year)	301	36	57	32	19	267	24	68	27	30
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	5,691	1,493	590	180	114	4,370	669	588	185	150
Annual death rate (per 1,000 persons living)			11.9	12.0	10.0			11.9	12.4	13.2
Live births	6,096	709	819	334	222	5,324	736	812	270	208
Annual rate per 1,000 persons living			16.6	22.3	19.4			16.4	18.2	18.3
Stillbirths	206	19	48			208	12	43		
Rate per 1,000 total births (including stillborn)			55					50		

* Made notifiable generally on Nov. 1, 1939.

† Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

‡ Since January 1, 1940, figures for London (b) have been for deaths from all forms of pneumonia; the corresponding figures for 1939 relate to deaths from lobar pneumonia only.

§ Death from puerperal sepsis.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS of their articles must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

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QUERIES AND ANSWERS

Blood-stained Semen

"INQUIRER" writes: I should be grateful for any information you can give me on the aetiology and significance of blood in seminal emissions, as I have never before seen a case or read of it in the literature. Excessive violence can be excluded, as it has occurred on the only occasion when there has been a nocturnal emission. There is no haematuria, no evidence of inflammation, and no history of V.D. Urine contains no albumin or sugar. The specimen brought to me was not uniformly blood-stained but contained small isolated pinkish patches, smears from which were examined microscopically. The pathologist's report stated that in addition to spermatozoa there were frequent red blood cells, also occasional degenerate polymorphs, but no pus as such. The patient had noticed slight pinkish staining after coitus for two or three months, though possibly it may have been there longer. His age is 49, and during the past two years or so he has developed Parkinsonism, for which he has been taking (1) three tablets of benzedrine on rising, (2) one tablet of hyoscine hydrobromide 1/100 grain t.d.s., (3) a small dose of extract of belladonna root at night. I have been wondering whether this symptom ever occurs in early prostatic enlargement, and, if so, whether it occurs with simple prostate or only with malignancy. I have also been wondering whether it occurs in the so-called male menopause, as there has been some diminution in virility recently, which I have attributed to the hyoscine medication.

Muscular Spasm during Anaesthesia

Dr. T. M. SHANNON (County Down, Ulster) writes: I was once administering ether on an open mask, following induction by narcotile (bromethol), to a girl aged 1 year when she suddenly developed rigid spasm of muscle and the breathing stopped. The jaws were so tightly clenched that they could only be opened with difficulty. In time the spasm passed off without treatment. I do not know whether this was a case of ether convulsions, discussed recently in the *Journal*, because there was no clonus. At the time the condition was thought to be due to too deep anaesthesia. I have made inquiries about the cause of the condition, but have been unable to receive enlightenment. I would be pleased if any reader could inform me of the cause and treatment.

Solubility of Mustard Gas in Paraffin

"M.B., B.CH." writes: Some months ago I read in your *Journal* that mustard gas was very much more soluble in liquid paraffin than in water. I should be interested to know from an expert whether small bottles of liquid paraffin carried in the gas-mask case would be useful as an emergency treatment for contaminated eyes when immediate irrigation was not available.

*** We have received the following reply to "M.B., B.Ch.'s" inquiry: Nothing is to be gained by instilling oily drops into a gas-contaminated eye if the conjunctival sac has not first been freely irrigated (with almost any fluid, since irrigation acts as a mechanical cleanser and not as a chemical counter-measure). Oily drops in absorbing gas would only expose the eye to a higher concentration of the irritant, as oil tends to remain in the conjunctival sac and would form a gas-laden film over the cornea.—ED., *B.M.J.*

LETTERS, NOTES, ETC.

Restriction of High-frequency Apparatus

DR. AGNES SAVILL (London, W.1) writes: Many physicians have not seen the announcement in the public press and the medical journals that the Home Secretary, acting in the interest of public security, has forbidden the use of all forms of high-frequency apparatus with an output of over 10 watts, except under permit from the Postmaster-General. Short- and long-wave diathermy both come under this ban. Medical men, masseuses, manufacturers, nursing homes, and hospitals cannot use short- or long-wave diathermy without a special permit. All who possess such apparatus must forthwith report to the local police, and must take steps to prevent the use of their machines. Apparatus not thus reported is liable to be seized. The reason for these strong measures was thus summed up in the *Times* some weeks ago: "The danger of interference at a vital moment to the wireless communications of the Services and to the radio control of our aircraft is so great that it has been found necessary to issue the prohibition. The operator of this type of apparatus is nearly always unaware of the interference it is causing, and it is most difficult for the services being interfered with to locate the source of interference. It is realized that great hardship must be inflicted on those who have specialized in medical electricity, but the security of the realm has to be put before the interests of individuals." The article in the *Supplement* of September 21 (p. 25) expresses sympathy with those affected by this law and gives particulars.

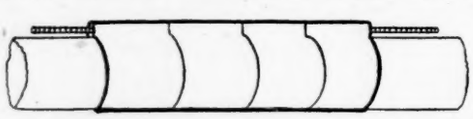
Alcoholism and Cirrhosis of the Liver

DR. R. L. HAVILAND MINCHIN (Central Research Institute, Kasauli, India) writes: With reference to your leading article on the social aspects of alcohol (July 6, p. 18), which has just reached here, I was astounded to see that in the last paragraph you refer to the "deaths from alcoholism and cirrhosis of the liver," implying that they are one and the same thing. Surely the fact that cirrhosis of the liver is secondary to chronic gastritis and only very rarely due to alcoholism has been sufficiently proved to impress even the most bigoted teetotaller. And if it has not, the appalling number of cases of cirrhosis seen in tropical countries among non-alcohol-consuming Muslims should prove a conclusive argument. I feel that the bracketing together of these two unrelated causes of death in a leader in a paper of the distinction of the *British Medical Journal* can only add to the confusion of false facts and statistics that have always confounded the arguments on the so-called "problem" of alcoholic drink.

*** In this country, to quote a well-known textbook of medicine, "a very large majority of patients with cirrhosis of the liver have indulged excessively in alcohol; it is three times more common among people connected with the liquor trade than among the general public." It is reasonable to assume, therefore, that in this country the number of cases of cirrhosis of the liver is an index of alcoholism. That alcoholism is not the immediate cause of cirrhosis of the liver, but that this may be a deficiency disease, was discussed in an annotation in the *Journal* of November 2, p. 600.

Removal of Plaster Casts

DR. F. GORDON CAWSTON (Durban) writes: Elaborate devices for removing plaster from limbs may be avoided by inserting a chain between the plaster bandages when they are being applied, avoiding contact with the skin or pressure on bony prominences. Traction on the chain when removing the plaster helps to break



through the outer layers. A few turns of a plaster bandage applied to injured fingers promote the repair of superficial wounds by controlling the movements of neighbouring joints and are easily removed. The diagram shows how a chain, chain-saw, or wire may facilitate the removal of plaster, the plaster bandaging being pressed in to form a raised channel while being applied.

Protection against Heat- and Sun-stroke

DR. ALICE M. PENNELL (London) writes: Dr. C. Grantham-Hill (September 7, p. 337) writes of his experiences in the hot climate of the Sudan and the protection given by Crookes's lenses and a topee against the sun's rays. I have been practising for many years in my own country—India—and during the last war and the Afghan War that followed we found that the incidence of heat-stroke and of sunstroke were greatly diminished when the men were supplied with dark glasses having side-pieces. This has been my own personal experience since 1906. The nape of the neck is generally protected by the back of the sun helmet, but the rays entering laterally on the eyes are not usually remembered, nor is their power realized till relief by means of glasses with side protection makes life much easier; and headache and strain on hot summer days are reduced to a minimum.

Strangulated Hernia in Infancy

MR. G. H. STEELE (Guildford) writes: I do not wish to foment a contest for the "youngest ever" on the lines of the "oldest ever" strangulated hernia competition recently conducted in your columns, but the case recorded by Dr. John Gordon (November 2, p. 594) of strangulation in a child of 5 weeks prompts me to report a similar instance occurring recently in a boy of 3 weeks and 5 days. The operation was performed under local anaesthesia, and the child made an uninterrupted recovery in spite of the fact that the gut and the normally descended testicle were both purple-black.

Treatment of War Wounds

DR. A. C. F. HALFORD (Brisbane) writes: Your leading article (July 6, p. 17) provokes me to address you with a protest against the prevailing tendency to seek after chemotherapeutic prophylaxis and chemical bactericides applied directly to a wound or indirectly through the blood stream, neglecting the valuable means of prevention by the intelligent use of antiseptic dressings. In a previous communication submitted I stressed the importance of following Lister's plan by excluding all chance of secondary infection. I see very little evidence of signs of effort in this direction. This is true prevention; if it should fail, as is seldom, a cure may be tried. Any other form of prophylaxis than the antiseptic dressing is mostly impracticable, whereas the free use of the double cyanide of mercury and zinc in powder incorporated with a dry dressing or even boric acid liberally applied to soiled dressings will keep the wound sweet for many hours of transport to a base. Commercially boric acid and boron derivatives are highly valued as preservative agents, yet surgeons have no use for these valuable reagents in keeping a dressing free from contagions and so the wound beneath it, where tissue resistance is allowed full play and can be relied upon to win through. Prevention is the watchword; cure must follow neglect.

Doctors as Home Guards

"L.D.V." writes: I think it would be interesting to have some idea how many old doctors there are like myself (my age is 63) who, although too old, so we are told, to undertake any part in the E.M.S., are not too old to stand and walk about half the night with a rifle; too old to do the work that they have been doing all their lives, but not too old to do something requiring a much higher standard of physical fitness. It sounds rather ridiculous when written down in plain words, but there it is—an undeniable fact. I remember once sending an officer who had been boarded out of one of the Services, and with whom I could find little or nothing wrong, to see a well-known consultant, who reported that the officer's only disability seemed to be the lack of friends in high places; and in view of the very numerous exceptions to the 55 age-limit rule made in the E.M.S. one wonders if a number of unemployed and quite fit old doctors are not suffering from the same complaint.

First-aid Lectures: A Helpful Exercise

MR. A. P. BERTWISTLE (London) writes: Many lecturers in first aid must be reaching the end of their repertoire in the way of lecturing. I suggest the following exercise as a means of filling in lecture time profitably. Ask for six casualties from the audience, asking them to describe the signs and symptoms of each; write them on the blackboard. A typical list is: (1) compound fracture of skull; (2) wound of brachial artery; (3) penetrating wound of chest; (4) compound fracture of thigh; (5) fracture of forearm; (6) fracture of spine. Now the "game" begins: Which is the right order of priority of treatment? Obviously it is unthinkable that a man should bleed to death from a wound of the brachial artery, so this should receive first attention. A man with a penetrating wound of the chest, leading possibly to a pneumothorax, should receive a wet dressing; a picric burn dressing is the handiest available. The man with the compound fractured thigh must not be allowed to get infected, so he will be dealt with third. The compound fracture of the skull receives attention next, and the man with the fracture of the spine comes last, as least can be done for him. The main object of the exercise is to attend first those for whom most can be done, and not necessarily those with the most serious injuries. I do not suppose there will be any agreement with the order in which I should deal with them, but that is what adds spice to the "game."